DOCUMENT RESUME

ED 232 700 IR 050 357

AUTHOR Fjallbrant, Nancy, Ed.
TITLE Education for Work in Technological University Libraries. IATUL Proceedings, Vol 13, 1981.
INSTITUTION International Association of Technological Univ. Libraries, Gothenburg (Sweden).
PUB DATE 81
NOTE 93p.
PUB TYPE Collected Works - Serials (022) -- Viewpoints (120) -- Reports - Descriptive (141)
JOURNAL CIT IATUL Proceedings; v13 1981

EDRS PRICE MF01/PC04 Plus Postage.
DESCRIPTORS *Academic Libraries; Continuing Education; Employment Qualifications; Foreign Countries; Higher Education; Information Science; *Information Scientists; International Organizations; Job Training; *Library Education; Professional Education; *Research Libraries; *Special Libraries
IDENTIFIERS Finland; *Information Management; Information Transfer; New Zealand; *Scientific and Technical Information; Sweden; United Kingdom; United States; West Germany

ABSTRACT

The views of practicing librarians, library directors, and library school teachers are presented in this series of papers on the educational needs of those planning to work in academic and special libraries, particularly scientific and technological research libraries. Included are: (1) "New Trends in Education of Librarians and Documentalists in the Federal Republic of Germany," by Paul Kaegbein; (2) "Ideal Staff for Technological University Libraries," by Elin Tornudd (Finland); (3) "Education for Work in Special Libraries in New Zealand," by Peter Durey; (4) "Education for Information Intermediaries, An Example from the School of Information Studies, Syracuse University, N.Y.," by Gunnel Hessler (Sweden); (5) "Training Junior Staff in a Major Research Library for Science and Technology," by Peter Warren and Dennis Shaw (United Kingdom); (6) "Education for Special Librarianship in the United States," by Kathleen T. Bivins; (7) "The Swedish School of Library and Information Science and the Education of Librarians for Special Libraries," by Chagan Lalloo; (8) "Continuing Education in the 80s: Thoughts of a Service Librarian," by Patricia Gebhard (United States); (9) "Information Transfer: A Conceptual Model for Librarianship, Information Science and Information Management with Implications for Library Education," by Roger Greer (United States); and (10) "Qualifications Required of Staff Members at University of Technology Libraries," by Sven Westberg (Sweden). (ESR)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED232700

IATUL Proceedings

Vol. 13. 1981

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☒ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

Education for work in Technological University Libraries

edited by Nancy Fjällbrant

© 1981

ISSN 0018-8476

IR050357

Published by IATUL
Chalmers University of Technology Library
Göteborg, Sweden

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Nancy Fjallbrant
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

CONTENTS

	Page
FOREWORD	1
NEW TRENDS IN EDUCATION OF LIBRARIANS AND DOCUMENTALISTS IN THE FEDERAL REPUBLIC OF GERMANY Paul Kaegbein	3
IDEAL STAFF FOR TECHNOLOGICAL UNIVERSITY LIBRARIES Elin Törnudd	25
EDUCATION FOR WORK IN SPECIAL LIBRARIES IN NEW ZEALAND Peter Durey	27
EDUCATION FOR INFORMATION INTERMEDIARIES. AN EXAMPLE FROM THE SCHOOL OF INFORMATION STUDIES, SYRACUSE UNIVERSITY, N.Y. Gunnel Hessler	33
TRAINING JUNIOR STAFF IN A MAJOR RESEARCH LIBRARY FOR SCIENCE AND TECHNOLOGY Peter Warren & Dennis Shaw	37
EDUCATION FOR SPECIAL LIBRARIANSHIP IN THE UNITED STATES Kathleen T. Bivins	53
THE SWEDISH SCHOOL OF LIBRARY AND INFORMATION SCIENCE AND THE EDUCATION OF LIBRARIANS FOR SPECIAL LIBRARIES Chagan Lalloo	61
CONTINUING EDUCATION IN THE 80s: THOUGHTS OF A SERVICE LIBRARIAN Patricia Gebhard	71
INFORMATION TRANSFER: A CONCEPTUAL MODEL FOR LIBRARIANSHIP, INFORMATION SCIENCE AND INFORMATION MANAGEMENT WITH IMPLICATIONS FOR LIBRARY EDUCATION Roger Greer	77
QUALIFICATIONS REQUIRED OF STAFF MEMBERS AT UNIVERSITY OF TECHNOLOGY LIBRARIES Sven Westberg	91

FOREWORD

"By education most have been misled;
So they believe, because they were so bred.
The priest continues what the nurse began,
And thus the child imposes on the man."

John Dryden
The Hind and the Panther 1687.

The role and functioning of the University of Technology Library have undergone considerable changes in the last twenty years. Improvements in telecommunications and computer technology have revolutionized methods of information handling and transfer. User needs have begun to influence library planning and organization. How do these changes affect the education and training of library staff for work in specialized libraries? This theme number of IATUL is devoted to the views of practicing librarians, library directors and library school teachers on educational needs for those planning to work in University of Technology Libraries.

I would like to add one further comment to the views expressed in the following articles. There is a very real need to include training in information presentation in both spoken and written forms in librarians education. If library staff are to present their ideas to other members of society - the decision-makers, academic staff and students the method of presentation can affect the results. Readers wishing to comment on any of the opinions expressed in the articles are invited to submit letters to be published in a future issue of IATUL Proceedings.

Nancy Fjällbrant

NEW TRENDS IN EDUCATION OF LIBRARIANS AND DOCUMENTALISTS IN THE FEDERAL REPUBLIC OF GERMANY

Professor, Dr. Paul Kaegbein
University of Cologne, Cologne, West Germany
in cooperation with Diann D. Rusch

Abstract

Assuming that the basis for all types of professional education lies in the educational system of the specific country, as well as in the functions of those institutions for which the future generation of professionals is being educated, at the beginning of this paper the library and information landscape in the Federal Republic of Germany is highlighted. This is followed by an overview of the current structure of primary, secondary, and higher education and of the various professional library career "tracks" in relationship to the specific tasks in the areas of librarianship and documentation. Similarities and differences between these two areas are pointed out which in the past resulted in the development of different curricula. In the focal point of these observations are the combined training programs for librarians and documentalists at the college level which already have been offered for several years in various German library schools. Their background and the sequence of study are delineated in terms of both theory and practice, and the curriculum content of these programs is observed with a perspective to the practical demands of the professions and in comparison with efforts for separated professional training for careers in documentation centers and libraries.

The integral interconnection between theory and practice has influenced the entire realm of librarianship and therefore has played a significant role in the education and training of librarians.[1] In view of the ever-increasing coverage within the informational tasks of libraries[2] and the necessity of close cooperation between those information mediators, which in Germany are designated on the one hand as librarians and on the other hand as documentalists,[3] the coordination of training programs for these professions will have a marked effect on libraries of the future.[4]

Issues concerning education and training--regardless of which profession they deal with--cannot be considered independent of the cultural and social situations within individual countries. The cultural history of a people is firmly impressed upon its educational system, and all forms of higher education are dependent of the school system in the country where the system is planned and carried out, and in which the graduates will be productive.[5] This is true, of course, also for the education of librarians.

In the Count August Library in Wolfenbüttel, an old book-wheel can still be seen in actuality[6]--similar to the one in the artist's conception which the United States Council on Library Resources has used for the emblem of its annual reports for two decades. The

explanation for the selection of just this sort of reading machine is stated by the Council as follows: "The picture symbolizes the interest of the Council on Library Resources in both the content of books and the mechanics of library service."[7]

Such a statement serves as a "campaign slogan" or motto to which all libraries in all countries should feel committed regardless of the specific responsibilities individual libraries have assumed, and regardless of the type of library. As in other countries, over the years, the historical and cultural development in Germany has contributed to the creation of a multitude of different types of libraries.[8] According to the nature of their users, as well as their functions, they can be divided into three categories: First, libraries which serve the public (this includes public libraries as well as academic and research libraries at the city, regional and State levels); second, other libraries which belong to various levels of the educational system (namely, school libraries, libraries of technical schools and universities); and third, libraries which exist as part of individual institutions and which have more specialized collections, user groups and functions (namely, all types of special libraries). Reference and informational services of the individual libraries differ according to their users--in scope as well as in content and the nature of the requests.

In larger cities, the municipally-funded public libraries which originated during the middle of the nineteenth century[9] have developed highly differentiated library systems with numerous branches. In some instances, they are also supported by the churches in their task to supply literature to the people. The central libraries of these systems are being developed more and more into centers of specialized information.

Within the group of libraries belonging to individual educational institutions, university libraries play a predominant role.[10] Their importance is based on the one hand on their historical development which often extends back into the Middle Ages as for example in Heidelberg, and on the other hand, on their extensive collections of internationally significant literature which have been built up over many decades. Frequently, university libraries are called upon to perform regional services which extend beyond their institutional functions. Especially within those universities which have numerous larger and smaller departmental libraries, the university libraries have various coordinating functions.

The libraries which function on a regional level have built up their holdings from the libraries of the former ruling nobility. They supply their region with literature according to the German Library Plan of 1973,[11] a hierarchical plan developed by the combined efforts of the nation-wide library associations and presented by them to the Standing Conference of the State Ministers of Culture and Education. This Plan sets forth the responsibilities of the various libraries at four well-defined levels--namely, local, municipal, regional and supraregional. (See Figure 1.)

THE SYSTEM OF GERMAN LIBRARIES ACCORDING TO THE

LIBRARY PLAN OF 1973

4th Level Supraregional	The Deutsche Bibliothek (Frankfurt am Main)
	The Staatsbibliothek Preussischer Kulturbesitz (Berlin)
	The Bayerische Staatsbibliothek (Munich)
	Central Subject Libraries-- for Medicine (Cologne), Economics (Kiel), Agriculture (Bonn), Technology (Hanover)
	Special libraries and other libraries with collections of supraregional importance
3rd Level Regional (State-wide)	State libraries and other regional libraries; university and college library systems with regional functions
2nd Level	Large city central libraries and library systems
↑ Local ↓	
1st Level	Libraries in small towns, villages etc.

All other libraries belonging to specific authorities (research libraries, special libraries, government libraries, church libraries, school libraries, etc.) have the primary responsibility to their own clientele, but are in many cases integrated into this system at the corresponding levels or through the interlibrary loan network.

Figure 1

The regional libraries are also responsible for collecting and maintaining a depository of all new publications which originate in their region and also for compiling continuous regional bibliographies. In Germany, mandatory delivery of depository copies of all publications--both those within the book trade and those from sources outside of the commercial book trade--is regulated by law.[12] This mandatory delivery helps support the regional libraries in their specific bibliographic tasks.

A national library as such does not exist in the Federal Republic of Germany. Therefore, various centralized services and those which extend beyond the regional level are performed by the following libraries: The Deutsche Bibliothek (German Library) in Frankfurt am Main,[13] the Staatsbibliothek Preussischer Kulturbesitz (State Library of the Foundation Prussian Cultural Heritage) in Berlin,[14] the Bayerische Staatsbibliothek (Bavarian State Library) in Munich,[15] as well as four Zentrale Fachbibliotheken--Central Subject Libraries[16] for specific disciplines, namely, for Medicine in Cologne, Agriculture in Bonn, Engineering and Technology in Hanover and Economics in Kiel.

The trend towards intensive development in the field of information storage and retrieval, which can currently be seen in many countries, has also led to many discussions in the Federal Republic of Germany concerning the role of libraries in the information process and in supplying informational services. Since libraries have an essential responsibility for making literature available within that part of the information processing cycle which depends on printed materials,[17] library cooperation with other units and establishments in the information processing system is an integral part.

It is obvious, that such discussions also include the area of education and training for the informational sector. Thus, today, as in the past, Goethe's words in Faust I hold true: "That which one does not know, one needs to use; and what one knows, one uses never."[18] The avalanche of information which has been prophesied for years is threatening to catapult into an "information crisis". The industrial society is--as the experts say--on its way to becoming an informational society. But whether this will really be an informed society, will depend to a great degree on the generation of future librarians and documentalists now preparing to emerge into the field. This also depends on whether these future librarians and documentalists will develop into information managers who are conscious of their responsibilities and fully competent in the fundamental knowledge and methods of their discipline.[19] As early as 1971, the eminent sociologist Walter Rüegg sketched the path "from the book seller to the information broker" within the book trade.[20] Thus, it is only justified to consider such possibilities for an educational and training program which fully anticipates future responsibilities without, at the same time, sacrificing the time-tested foundation of a multi-faceted librarianship program within the individual country.

However, before going into further details concerning the differences and common traits between the librarian and documentalist professions and professional training in Germany, it is necessary to look at the development of the librarians' education and training in Germany. Typical for the majority of all German librarians is the fact that they are employed as civil servants either by the Federal Government, the State government or the local government--which in the end provide the financial support for most of the above-mentioned types of libraries.

The general education for civil service in Germany has a long tradition. As early as 1817, a decree was in effect in Prussia that candidats for higher administrative positions, after completing a university degree and a period of practical experience, had to pass a State examination administered by the supreme examinating commission in Berlin.[21] This practice of giving a State qualifying examination for civil servants which is extraneous to and in addition to the university examinations and degree spread with time into other civil service careers and led to the establishment of individual State training programs for civil servants in certain areas. This applied later also for the education of those librarians who--as already noted--are predominately employed by libraries which are financed with public funds. The degree to which the specific professional status of these librarians crystalized as a result of their specific professional activities and responsibilities, and consequently distinguished itself as a special individual professional group apart from the general adminstrative personnel, influenced those Federal and State officials responsible for decisions on library matters to establish specific education and training guidelines for librarians on the basis of specific State-administered educational programs and examinations.[22]

This development was accompanied by the fact that after the Second World War, a number of librarians' education and training schools were established in the Federal Republic of Germany directly by the State governments and totally independent of the universities and colleges. On the basis of the Federal Constitution of West Germany, all cultural affairs fall under the jurisdiction of the individual State governments--not at the Federal level--and thus, almost every State has its own librarians' training school:

for the State of Baden-Wuerttemberg, the Library School is in Stuttgart
for State of Bavaria in Munich
for the City-State of Berlin in Berlin
for the City-State of Hamburg in Hamburg
for the State of Hesse in Frankfurt am Main
for the State of Lower Saxony in Hanover
for the State of North Rhine Westphalia in Cologne

In addition, another library school established and financed by the Catholic Church exists in Bonn. Examinations and completion of the program of study at this school are recognized by the State authorities.

A further particularity regarding the situation surrounding library education in Germany should be interjected here. The employment in civil service is divided into several different so-called "career levels".[23] These include the "hoeherer Dienst", the "gehobener Dienst", the "mittlerer Dienst" and the "einfacher Dienst". (See Figure 2.)

With the exception of the "einfacher Dienst", there is a specific educational and training program for each of the above-named career levels for librarianship which distinguishes itself from the others according to the entrance prerequisites as well as the level of the professional status upon completion, and according to the content and specific activities which the librarians at the various levels will be expected to perform.

This division of career level librarians is inbedded in and corresponds to the hierarchy within the German school system and professional education policies. The current educational system and possible educational and professional "tracks" in Germany can be illustrated using the example of the educational system in the State of North Rhine Westphalia. (See Figure 3.)

At the age of six years, the child enters the primary education level, which encompasses four years. The first level of the secondary education follows in the next six years of school which, when completed, are considered the "Fachoberschulreife" (Technical High School Maturity). After completing the ninth year of school, the pupil may leave the school with the so-called "Hauptschulabschluss" (Upper Division Elementary Diploma). If the pupil wants a career in civil service, the opportunity of an educational program for the "mittlerer Dienst" is open to him at this point.

The level II of the secondary education, with its three additional years of school, provides for two different completions designated as: the "Fachhochschulreife" (Technical College Maturity) after completion of the twelfth year of school, and the "Allgemeine Hochschulreife" (General College Maturity) after completion of the thirteenth year of school. The level of Technical College Maturity opens the possibility of study at a technical or specialized, profession-oriented training school, namely, the educational training program for the "gehobener Dienst"; the General College Maturity is the prerequisite for the study of a chosen subject at a university. Only upon completion of a university degree in a specific area, it is possible to enter a State educational training program for the "hoeherer Dienst" or Subject Specialist. Additional educational courses provide a certain degree of flexibility between the individual levels of the civil service career levels.

Civil Service Career Levels

in the Federal Republic of Germany

Civil Service Designations and Levels	Corresponding Designation for Librarians/Documentalists - - - - Prerequisites for Training
"Hoeherer Dienst" (senior level civil service)	Subject Specialist or Senior Librarian Scientific or Research Documentalist - - - - Prerequisites for this postgraduate professional training: Completion of university studies (State examination, University Diploma, Master's Degree, or Doctorate)
"Gehobener Dienst" (upper level civil service)	Certified Librarian at academic, research, special or government libraries Certified Librarian at public libraries Certified Documentalist - - - - Prerequisites: Technical College Maturity or General College Maturity
"Mittlerer Dienst" (middle level civil service)	Library Assistant Documentation Assistant - - - - Prerequisites: Upper Division Elementary Diploma
"Einfacher Dienst" (non-professional clerical civil service)	No specific career designation for these library clerical/technical services personnel - - - - Prerequisites: None--as there is no professional training program for this level

Figure 2

The German Educational System

(based on the example of North Rhine Westphalia)

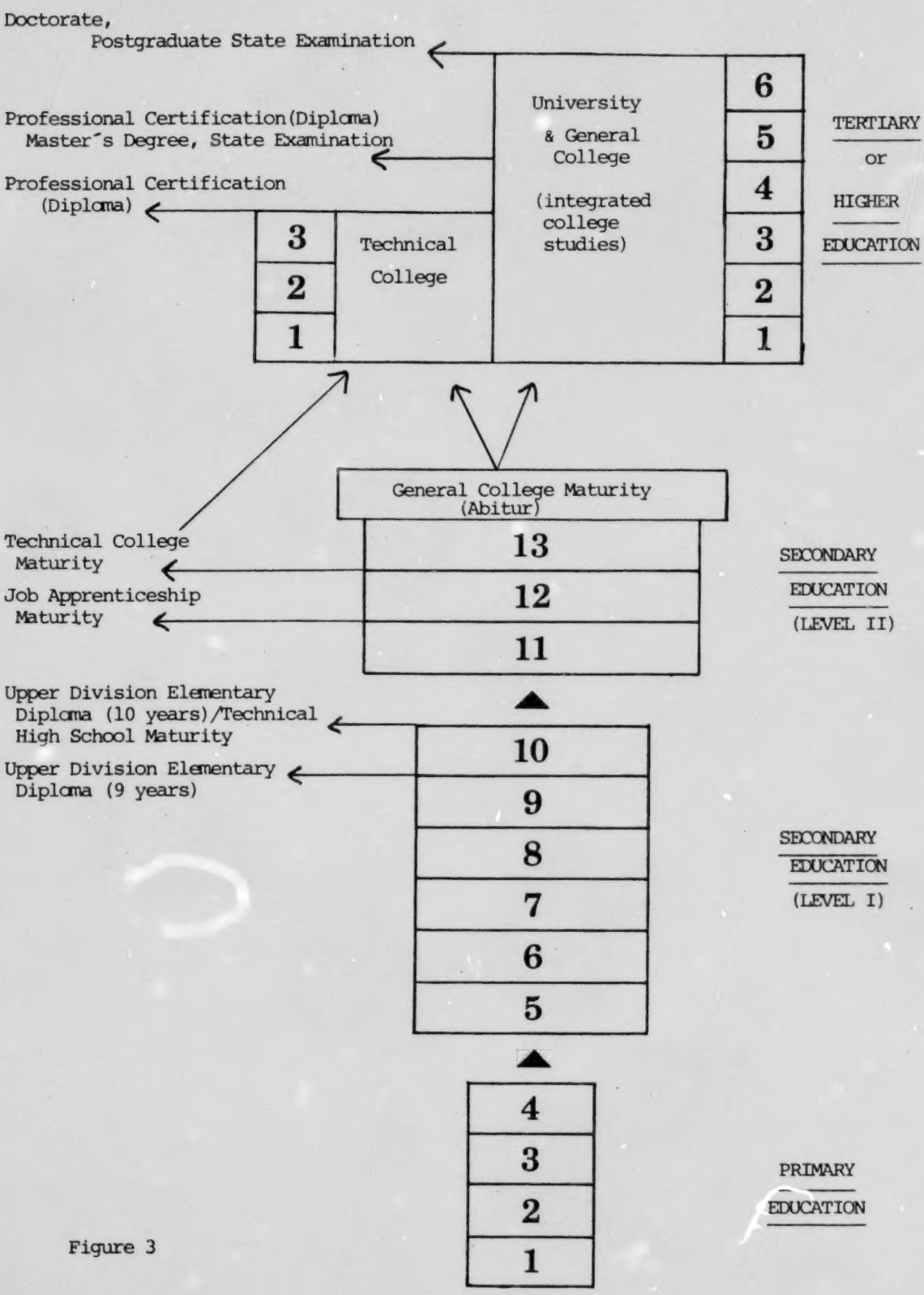


Figure 3

Within this framework, the career level of the "gehobener Dienst" or Certified Librarian deserves special attention. The largest number of librarians in the Federal Republic of Germany are employed at this level and again, the marked influence of the general administrative hierarchy is very clearly seen. After the university reforms in the Federal Republic of Germany had been concretized and approved several years ago, it was decided that the education and training program for the "gehobener Dienst" should take place at the level of technical colleges.[24] This made it necessary that also those library schools which prepared certified librarians for civil service would have to relinquish their previous status as institutions supervised under the appropriate government Ministries and become separate State Colleges for Librarianship under the Ministers for Scholarship and Research of the respective individual States. At the same time, the stipulation was made that the certified librarians would complete their study with one examination which then also resulted in the conferral of an academic degree. In the case of the education of certified librarians for more specialized academic, research, special or government libraries, the graduates would also be conferred the State qualification for employment as civil servants in various libraries.

From the above-described process of the development which librarians' education and training has taken in the past decades, it is clear that the area of documentation was more or less forced to pave its own way. This is evidenced in part by the fact that only after the Second World War in the Federal Republic of Germany, the profession of the documentalist developed into an independent profession with its own job description. On the other hand, it should be noted that this profession was not previously included in the official contract negotiations which were made between representatives of the administrative authorities of the Federal, State, and local governments on the one side and the civil servant unions on the other side. The ultimate result of this was that the corresponding education and training program for the documentalist profession was necessarily relegated to private institutions and corporations. This was the general state of affairs in 1954 when the Deutsche Gesellschaft fuer Dokumentation (German Society for Documentation) intervened and founded the Lehrinstitut fuer Dokumentation (Private Training School for Documentation) in Frankfurt am Main.

It is typical again here, that--as already indicated in the case of general civil service and therefore in the library profession--that the prevailing hierarchy of different career levels has also had its effect on the educational program for documentalists. Correspondingly, the educational and training programs for documentation assistants, certified documentalists and scientific or research documentalists have been conducted up to this point in the Training Institute in Frankfurt am Main. The future domain for the documentalist however, in contrast to the librarians, is predominately in private industry; corporate societies, industrial firms and privately-financed institutions are the major employers of the graduates of this Institute.

This situation was the reason that special libraries and particularly administrative libraries at various governmental levels looked for ways and means to have the area of documentation officially made a required part of librarians' education programs, inasmuch as for this group of libraries up to now there were no specialization possibilities within the existing education programs. As a spin-off result of such a development, the inclusion of the professional position of the documentalist will hopefully be reflected in future civil service contract negotiations. In view of these considerations, however, it is soon apparent that the implementation of an independent educational program for those documentalists who will later be employed in governmental or public service institutions is not possible because of certain topical problems, professional policy (and politics) and the particular legal status of official administrative personnel in the Federal Republic of Germany.

On the part of those libraries which are already more or less involved in the area of documentation, it has been justifiably pointed out that the sphere of activity of certified librarians and certified documentalists overlap significantly in fundamental areas. Countless methodological similarities are revealed in the area of acquisition of all types of media, in the forms of subject classification with respect to both library and documentation aspects, and in the methods of making the various user groups aware of the materials available to them.[25] Therefore, a combined training program for both professional groups is not only justifiable on the basis of content, but would also result in the advantage of a better mutual basis for understanding and cooperative organization of special library or documentation working procedures.

As a result of such considerations and ensuing discussions conducted at various levels by several official bodies, the various committees of the Standing Conference of the State Ministers of Culture and Education, which are concerned with precisely this sort of questions, have requested the development of a conceptual plan of a combined professional training program for the levels of civil servants. Consequently, a report has been submitted in which the following conclusions were drawn:[26]

1. The employment scene and responsibilities of certified librarians and certified documentalists coincide with one another substantially at essential points, even if differently-worded formulations are presently used to describe the separate activities.

2. The increasing professional interconnection, and above all, the advancing mechanization in the information sector will lead to a still more pronounced unification of these activities which must then also be reflected in the training programs.

3. To carry out their tasks, librarians and documentalists use similar techniques, depend upon the same basic information storage mediums, and serve almost the same user groups.

This report has served, and will continue to serve as the basis for the establishment of official regulations for training programs and professional examinations for the "gehobener Dienst"--certified librarian/certified documentalist at academic and research libraries and documentation institutions. Such programs have been in effect since the first of October 1979 in the State of Baden-Wuerttemberg[27] and in the training program for the Federal Government library and documentalist officials,[28] and since the first of October 1980 in the School of Librarianship of North Rhine Westphalia.[29] Furthermore, it is expected that the State of Berlin (West) will also follow suit in the near future, and that these steps will "give the green light" for other States to develop similar programs for librarians and documentalists.

It must, however, be emphasized that these educational and training policies refer primarily to the levels of activity of the certified librarian and the certified documentalist, that is, the "gehobener Dienst". The "mittlerer Dienst" (Library Assistant) and the "hoeherer Dienst" (Subject Specialist) have been excluded from such considerations for the time being, although a definite overlap between the two professional groups exists--especially at the level of the "hoeherer Dienst"--making a future combination of the educational and training programs not only viable, but also extremely advantageous and appropriate. It should also be added that in connection with the strong tendency in public libraries towards incorporating more materials and working methods from the informational sector, public libraries will also be significantly affected by these developments in the coming years.

Organizationally, the combined education and training is conceptualized as follows:[30] the entire training time period usually encompasses 19 months of theoretical study and 17 months of practical instruction. From the various libraries and documentation institutions available for the practicums, candidates may opt for either a concentration in librarianship or documentation. The major part of the practicum (approximately 12 months) takes place in an institution belonging to the selected area while the complementary practicum (approximately 5 months) provides practical experience in the other area. The theoretical study treats topics dealing with librarianship and documentation equally and the final State examination enables the graduate to work in either libraries or documentation institutions. Thus, long-range plans can be introduced whereby the workers in libraries and documentation institutions see themselves as members of <u>one</u> vast, but interconnected field of informational services--more closely connected than in former times, and despite many divergent, specialized aspects present in the individual professional activities of the two groups, nevertheless the common basis

remains clearly in the foreground. The developments in this direction also provide a reasonable basis for fruitful cooperation between these two professional areas. Such cooperation is technically and organizationally easy to set forth on paper and in discussions, but realizable only in practice; --and only through the active commitment of the individual co-workers who are totally convinced of these goals, can the continuance of such cooperation be assured.

Based on these considerations regarding professional qualifications, the curriculum and licensing examination regulations for the training programs include the following content areas:[31]

- Introductory subjects, such as foreign languages, introduction to scholarly research, introduction to data processing
- Development and current state of the art in various areas within the informational field
- Organization, operation and management of libraries and/or documentation centers
- Study of the book and media
- Formal cataloging and classification
- Information services and bibliography
- Legal and administrative studies[32]

In marked contrast to the program described here is the attitude which is widespread in documentation circles, especially within the Verein Deutscher Dokumentare (Society of German Documentalists) which is primarily composed of the graduates of the above-mentioned Private Training School for Documentation. They believe that in the area of documentation in response to the present professional demand, special professional programs of study should be offered in addition to those directed towards library work.[33] The basis for this attitude lies in the nature of documentation and informational services where the subject-oriented content component is very strongly represented and correspondingly required in practice. Thus, this emphasis on content must necessarily be established as a substantial part of the training from the very beginning. Examples for this can be drawn from documentation activities in the biological sciences and in related areas.

An educational program, which from the very beginning is conceived for professionals who will work in special areas, is based upon the conclusion that approximately 50% of all general knowledge should be conveyed within the area of information and documentation, and approximately 50% should be in subject-oriented areas. In certain

cases, methodological techniques in the respective fields of data processing, information management, marketing, etc., may be substituted for the subject-oriented knowledge.

Such a differentiation between methodological study and subject study is considered necessary, primarily because of the great comprehensiveness which each of such specialized education and training programs already intrinsically possesses. This element of comprehensiveness could be so demanding that additional curricula requirements--for example, general library-oriented knowledge for the documentalist--would present a severe burden for the student. For the area of future employment selected by each candidate, the intensive subject knowledge is more important in the long run than a broad knowledge of several professional methodologies.[34]

Certain reservations, however, to this view point must be expressed in terms of the fundamental problems of the educational training. The objective of the combined education and training for the library and documentation areas referred to above is, as for instance the regulations of the Federal Government service state, that the professional become well versed in "the scientific results and methods as well as with professional practical competence, knowledge, and skills which all are necessary for the fulfillment of the tasks in ... academic and research libraries and documentation centers of the Federal Government."[35]

In order to attain such a goal, a broad methodological fundament is necessary for a solid basis for the beginning candidate.[36] This view, which also comes up in current discussions regarding the basic study in the engineering disciplines, was also recognized by Thomas W. Shaughnessy in a recent statement on library research, which can also be regarded as being quite relevant for librarian education: "Method alone does not guarantee solid research. If the content is weak, all manner of manipulation and massage cannot make it strong."[37]

With a solid methodological fundament, later possibilities are opened for the candidate to apply the methods learned in appropriate establishments within the informational sector. It is then of practically no consequence for him whether he works in a university library, a documentation center or a special library, and a transfer from any one of these institutions into another is possible. The necessary detailed knowledge of very specific areas will be gained thereby through the continuity achieved in working through real problems at hand and such practical experience provides a much better preparation than mere theoretical instruction.[38]

Such an educational program, though dependent on the quality of the education, also offers the basis for a relatively large opportunity for the graduate's professional mobility. This job mobility becomes increasingly limited according to the degree of

specialization and as the educational program itself becomes more specialized from the beginning--an aspect which will definitely carry a great deal of weight in economically trying times.

This point of view is apparently considered to be too narrow in those cases where special educational programs in the area of documentation have already been established or have been planned. Such is the case at the Fachhochschule Hannover (State Technical College at Hanover)[39] where the Department of Library, Information and Documentation Sciences already offers distinct educational and training programs for certified librarians in academic, research and scientific/technical libraries, and for certified documentalists in general documentation and also in biomedical documentation.[40] Similarly the State Technical College in Darmstadt plans to establish two different programs for documentalist training: First, a program of study for information methodology with special emphasis on media and economic fields; second, a program of study for information transfer with a technical emphasis in conjunction with the professional training of construction engineers, chemical technologists and mechanical engineers.[41]

A reasonable solution to the differing fundamental ideas concerning the objectives and course of study in the education and training programs for librarians and documentalists could be achieved in a program which begins with a strongly methodologically-oriented professional education. This would then be combined with a career-qualifying State examination, after which differentiated special studies in the individual areas of information sciences and librarianship would be possible. An example of such a program is the supplementary educational program for the music librarian which is offered at the School of Librarianship in Stuttgart after completion of the educational training program for certified librarians. Similar programs would also be appropriate for school librarians or special librarians, as well as for documentalists at subject-oriented documentation centers--inasmuch as such a demand for this would exist.

As one can see from this presentation, there is no easy answer to the questions surrounding the educational and training program for librarians and documentalists. The various aspects, goals, and opinions which have thus far influenced the overall structure and content of these programs--and will likely continue to play a great role in future changes--still present certain irreconcilible differences. But as Aristotle stated in his Ethica Nicomachea, one cannot strive towards precision in all things in the same way.[42] An example of this can be seen in the subject-oriented component which plays a large role in the activities of documentalists employed in the industrial fields, but which however cannot be achieved to such a specialized degree within training programs which have a broad basic study as their objective. Only recently has the significance of subject knowledge within professional activity (of librarians and documentalists) been emphasized by Carol L. Learmont.[43]

The variety of ideas and conceptual models which have emerged in the educational and training sector is typical for disciplines which are still deep in the process of development, as is the case with library and information sciences. Such disciplines require precisely the stimulation of alternative measures to procedures used in the past which are anchored firmly in certain conceptual models. Dogmas resulting from these secure and time-honoured procedures must be boldly confronted so that advancement of the discipline can be guaranteed.

If I may dare to make a prognosis here, future librarians and documentalists in the next decades will be burdened and challenged with the task of being information mediators with a decisive responsibility towards the dynamically developing society in which they will function.[44] For such a society, factual subject-oriented information is ultimately mandatory for the processes of analysis, evaluation and decision-making in all areas which are subject of change and transformation. A recent research project conducted in the Federal Republic of Germany on the concept of integrated education and training programs for work in library, information and documentation areas (FIABID) very justifiably stressed in its final report that especially the area of librarianship must "become more aware of its communicative function in the future."[45]

The thoughts on this topic can hopefully help to develop new ways to prepare future generations of librarians och documentalists for their tasks--and hopefully, this paper has contributed some new perspectives to the variety of conceptual models which can be found in the education and training programs of librarians and documentalists world-wide.

Notes

1 See Guenther Pflug, "Die Bibliothek der Zukunft als Ausbildungsaufgabe der Gegenwart", in Zeitschrift fuer Bibliothekswesen und Bibliographie 18 (1971), 221-235.

2 The respective view given in the SCATT Report (Designing a National Scientific and Technological Communication System. Ed. by Russell L. Ackoff and others. Philadelphia: University of Pennsylvania Press, 1976) pp. 49-51 is only one aspect of the way in which libraries might been affected by such kind of developments. See also Guenter Gattermann, "Die Hochschulbibliothek als Informationszentrum", in Die Hochschulbibliothek. Ed. by Klaus-Dieter Lehmann and Hildegard Huettermann (Frankfurt am Main: Klostermann 1978), pp. 73-94.

3 The profession of the documentalist in Germany can be described as an information analyst who concentrates primarily on content analysis, compilation of bibliographies, of abstract journals, state-of-the-art reports, current-awareness and similar services, as well as on generation of databases in special areas. His activities further include providing access to these informational tools. In general terms, one can state that documentalists belong to that groups of information communicators which Fritz Machlup called processors, interpreters, and analyzers, see Fritz Machlup The Production and Distribution of Knowledge in the United States (Princeton: Princeton University Press, 1962), pp. 32-33, and in which groups librarians have to be included, too, see Note 19.

4 See the various papers in Gemeinsame Ausbildung fuer Bibliothekare und Dokumentare in Baden-Wuerttemberg. Ed. by Gerhard Roemer. Karlsruhe: Badische Landesbibliothek, 1981. 239 p.

5 Examples for the different ways of education with various cultural background are given by Ronald Charles Benge, Cultural Crisis and Libraries in the Third World (London: Bingley; Hamden, CT: Linnet Books, 1979) pp. 53-62, 210-211.

6 Described with picture in Sammler, Fuerst, Gelehrter. Herzog August zu Braunschweig und Lueneburg, 1579-1666 (Wolfenbuettel: Herzog August Bibliothek, 1979), pp. 291-292, No. 607. - Another picture can be found in Yorck Alexander Haase, Alte Karten und Globen in der Herzog August Bibliothek Wolfenbuettel (Wolfenbuettel Herzog August Bibliothek, 1972), p. 2.

7 Council on Library Resources, Inc. Third Annual Report for the period ending June 30, 1959, p.[63].

8 Gisela von Busse, Horst Ernestus, Libraries in the Federal Republic of Germany. Revised and enlarged English ed. Wiesbaden: Harrassowitz, 1972. 308 p. (A new edition is being prepared for 1983.)

9 Wolfgang Thauer and Peter Vodosek, Geschichte der oeffentlichen Buecherei in Deutschland. Wiesbaden: Harrassowitz, 1978. 163 p.

10 Gerhard Liebers, "The Traditional German University Library between Scholarship and Mass Education", in Studies on the Organisational Structure and Services in National and University Libraries in the Federal Republic of Germany and in the United Kingdom (Munich, New York, London, Paris: Saur, 1979), pp.77-84. -Joachim Stoltzenburg, "The Change of Patterns in German University Libraries", in ibid.,pp. 85-101. - Richard Landwehrmeyer, "University Libraries as Part of the German Supra-regional System of Literature Provision", in ibid.,pp.157-167.

11 Bibliotheksplan 1973. Entwurf eines umfassenden Bibliotheksnetzes fuer die Bundesrepublik Deutschland. Berlin: Deutsche Bibliothekskonferenz, 1973. 172 p.

12 Ralph Lansky, "Die pflichtexemplar- und amtsdrucksachenberechtigten Bibliotheken in der Bundesrepublik Deutschland und Berlin (West)", in Zeitschrift fuer Bibliothekswesen und Bibliographie 22 (1975), 136-141, 464.

13 Rainer Erzepky, "The Central Bibliographic and Information Services of the Deutsche Bibliothek in Frankfurt am Main", in Studies on the Organisational Structure ... (Note 10), pp.50-56.

14 "Die Funktion der Staatsbibliothek Preussischer Kulturbesitz", in Zeitschrift fuer Bibliothekswesen und Bibliographie 26 (1979), 1-12.

15 Kurt Dorfmueller, "The Bayerische Staatsbibliothek: Acquisition Policies and Methods of a Large State Library", in Studies on the Organisational Structure ... (Note 10), pp. 168-180.

16 Gerhard Schlitt, "Central Subject Libraries in the Federal Republic of Germany", in ibid., pp. 148-156.

17 Paul Kaegbein, "Libraries as Special Information Systems", in Special Libraries 69 (1978), 493-498.

18 Johann Wolfgang von Goethe, Faust.A tragedy in two parts. Translated by Bayard Taylor. London: Oxford University Press, 1963 (reprint), p. 34. (Part I, Scene II, line 259-260.)

19 "Librarians, in supporting the process of discovery, will be in many subject areas not only collectors and transporters of information (i.e., delivering it to the user in the exact form in which it is received) but transformers, processors, and analyzers, calling upon both bibliographic and subject knowledge in needed proportions." See Neal Harlow, "The Library in the Future of Higher Education", in Toward a Theory of Librarianship. Ed. by Conrad H. Rawski (Metuchen, N.J.: Scarecrow Press, 1973), p. 467.

20 Walter Rüegg, "Vom Buchhaendler zum Informationshaendler?", in Archiv fuer Geschichte des Buchwesens 11 (1971), 1806-1811; also in Walter Rüegg, Bedrohte Lebensordnung (Zuerich, Munich: Artemis, 1978), pp. 193-199.

21 "Instruktion zur Geschaeftsfuehrung der Regierungen in den Koeniglich-Preussischen Staaten. Vom 23. Oktober 1817", in Gesetz-Sammlung fuer die Koeniglichen Preussischen Staaten 1817, pp. 280-281 (Paragraph 49). - For references regarding the earlier development see Lecheler (Note 23), pp.5-6.

22 Paul Kaegbein, "Library Science and Library Education in the Federal Republic of Germany: Some Observations on the Contemporary Situation", in Anais do 9.º Congresso Brasileiro e V Jornada Sul-Rio-Grandense de Biblioteconomia e Documentação.Vol.2 (Porto Alegre: Associação Riograndense de Bibliotecários, 1977), p. 193-200.

23 Helmut Lecheler, Das Laufbahnprinzip. Seine Entwicklung, seine rechtliche Grundlage und seine Bedeutung für das Berufsbeamtentum. Duesseldorf: Paedagogik- und Hochschul-Verlag, 1981. 24 p. (= Verantwortung und Leistung. 3.)

24 "Empfehlung der Kultusministerkonferenz zur Ausbildung fuer den Dienst an wissenschaftlichen Bibliotheken. Beschluss der Kultusministerkonferenz vom 6. Mai 1974", in Gemeinsames Ministerialblatt des Auswaertigen Amtes, des Bundesministers des Innern, ... 25 (1974), 240-241; also in Ralph Lansky, Bibliotheksrechtliche Vorschriften. 3rd ed. (Frankfurt am Main: Klostermann, 1980), No. 1510, p.2. - "Rahmengesetz zur Vereinheitlichung des Beamtenrechts (Beamtenrechtsrahmengesetz - BRRG). Bekanntmachung der Neufassung vom 3. Januar 1977", in Bundesgesetzblatt. T. 1, 1977, p. 25 (Paragraph 14, No. 2).

25 "The central tasks of both librarianship and documentation are: (a) the acquisition of appropriate materials, (b) the organization of those materials for retrieval at any time, by any person, for any purpose, and (c) the use of the materials so acquired and organized." See Jesse H. Shera, "Education for Librarianship - An Integrated Approach", in ALA Bulletin 48 (1954), 171.

26 "Integrierte Ausbildung von Diplom-Dokumentaren und -Bibliothekaren des gehobenen Dienstes. Vorschlaege einer Arbeitsgruppe (Baden-Wuerttemberg)", in Gemeinsame Ausbildung fuer Bibliothekare und Dokumentare. Eine Materialsammlung. Ed. by Jutta Nafzger-Gloeser (Berlin: Deutscher Bibliotheksverband, 1978), pp. 16-37, esp. pp. 19 and 25.

27 "Verordnung des Ministeriums fuer Wissenschaft und Kunst ueber die Ausbildung und Pruefung des gehobenen Dienstes an wissenschaftlichen Bibliotheken und Dokumentationseinrichtungen (Ausbildungs- und Pruefungsordnung fuer den gehobenen Dienst an wissenschaftlichen Bibliotheken und Dokumentationseinrichtungen -APrO BuD gD). Vom 31. Juli 1980", in Gesetzblatt fuer Baden-Wuerttemberg 1980, 542-551. - See also Gerhard Römer, "Die gemeinsame Ausbildung von Diplombibliothekaren und Diplomdokumentaren in Baden-Wuerttemberg", in Mitteilungen der Gesellschaft fuer Bibliothekswesen und Dokumentation des Landbaues 29 (1980), 143-156.

28 "Laufbahn-, Ausbildungs- und Pruefungsordnung fuer die Laufbahn des gehobenen Dienstes an wissenschaftlichen Bibliotheken und Dokumentationsstellen des Bundes. Vom 16. Dezember 1980", in Gemeinsames Ministerialblatt des Auswaertigen Amtes, des Bundesministers des Innern, ... 32 (1981), 11-19.

29 "Ausbildungs- und Pruefungsordnung fuer die Laufbahn des gehobenen Dienstes an wissenschaftlichen Bibliotheken und Dokumentationseinrichtungen des Landes Nordrhein-Westfalen. Vom 1. Juli 1980", Gemeinsames Amtsblatt des Kultusministeriums und des Ministeriums fuer Wissenschaft und Forschung des Landes Nordrhein-Westfalen 32 (1980), 405-412. - See also Paul Kaegbein, "Zur gemeinsamen Ausbildung von Bibliothekaren und Dokumentaren des gehobenen Dienstes in Nordrhein-Westfalen", in Integrierte Ausbildungskonzeptionen im Taetigkeitsbereich Bibliothek, Information und Dokumentation. Ed. by Gunther Windel, Rosemarie Dorloff (Berlin: Progris, 1980), pp. 6-12.

30 See Note 29, Paragraphs 11 and 13.

31 See Note 28, Paragraphs 13, 14 and 27.

32 Advanced classification, advanced cataloging, organization of documentation, and documentation service are regarded as belonging to the major subjects in documentation training, see S.R.Ranganathan, "What and How of Documentation Training", in Toward a Theory of Librarianship (Note 19), p. 498.

33 Verein Deutscher Dokumentare (VDD), "Gemeinsame Ausbildung von Bibliothekaren und Dokumentaren", in Nachrichten fuer Dokumentation 29 (1978), 198; also in Gemeinsame Ausbildung fuer Bibliothekare und Dokumentare (Note 26), pp. 113-114. - Martin Anders, "Stellungnahme des VDD zu den Integrationsprojekten der Ausbildung in der Ebene des gehobenen Dienstes", in Integrierte Ausbildungskonzeptionen im Taetigkeitsbereich Bibliothek, Information und Dokumentation (Note 29), p. 48. - Dietrich Fleischer, "Bemerkungen zur geplanten gemeinsamen Ausbildung von Bibliothekaren und Dokumentaren aus der Sicht eines Dokumentars", in Zentrale Einrichtungen und zentrale Dienste im Bibliothekswesen. Ed. by Alexandra Habermann, Hermann Havekost and Helmut Sontag (Frankfurt am Main: Klostermann, 1980), p. 216.

34 Gunter Bock, "Anmerkungen zur geplanten gemeinsamen Ausbildung von Bibliothekaren und Dokumentaren der Ebene des gehobenen Dienstes an der Fachhochschule Hannover", in Gemeinsame Ausbildung fuer Bibliothekare und Dokumentare (Note 26), pp. 57-58. - Wolfgang Bartels, "Gemeinsame Ausbildung von Bibliothekaren und Dokumentaren. Stellungnahme aus der Sicht naturwissenschaftlich-technischer Bereiche der Industrie", in Mitteilungen der Gesellschaft fuer Bibliothekswesen und Dokumentation des Landbaues 29 (1980), 157-175.

35 See Note 28, Paragraph 1.

36 In 1954 already, Jesse H. Shera stated: "For the training of librarians and documentalists, a solid general competence in a cluster of related fields is far more valuable than intensive training in one, or even a limited number, of specialities." See Note 25, p. 170. - See also the statement of Horst Kunze: "It is unrealistic to expect the library curricula to produce, today or tomorrow, competent specialists for all branches of library service. It follows that the best preparation for the multifaceted demands of library practice is obtained through serious study of the fundamentals of librarianship. ... It is not the sum total of all learned facts that produces a librarian, but, rather, an understanding of bibliothecal activities and an appreciation of the goals and concerns they are intended to serve." Horst Kunze, "On the Professional Image and the Education of the Librarian", in Toward a Theory of Librarianship (Note 19), p. 519.

37 Thomas W. Shaughnessy, "Library Research in the 70's: Problems and Prospects", in California Librarian July 1976, p. 50.

38 "The graduate library schools can offer to their students merely the prerequisites for professional competence. It is the practice of librarianship which produces a librarian, who is useful to society." See Horst Kunze (Note 36), p. 520.

39 R. Hueper, "Der Modellversuch 'Konzeption und Entwicklung von Studiengaengen im Bereich Bibliothek, Information und Dokumentation (BID)' und das niedersaechsische Modell integrierter Studiengaenge im Bereich Bibliothek, Information und Dokumentation", in Integrierte Ausbildungskonzeptionen im Taetigkeitsbereich Bibliothek, Information und Dokumentation (Note 29), pp. 26-40.

40 O. Rienhoff, "Die Fachkomponente 'Biowissenschaftliche Dokumentation' im niedersaechsischen BID-Curriculum", in ibid., pp. 17-25.

41 Planung eines Studienfaches (Fachbereich) "Information und Dokumentation" an der Fachhochschule Darmstadt. Materialien und Planungsueberlegungen. Frankfurt/Main: Lehrinstitut fuer Dokumentation, 1980, pp. 10-11.

42 The Works of Aristotle. Translated into English under the editorship of W. D(avid) Ro[illegible]. Vol. IX. Ethica Nicomachea. By W.D. Ross. London: Oxford University Press, 196[illegible] (reprint), Book I. 3: "Our discussion will be adequate if it has as much clearness as the subject-matter admits of, for precision is not to be sought for alike in all discussions, ..."

43 Carol L. Learmont, "Placements and Salaries 1979: Wider Horizons", in Library Journal 105 (1980), 2271-2277.

44 Jesse H. Shera referred in detail to this social responsibility of librarians, see Note 25, p. 172.

45 Gernot Wersig, Zu einer integrierten Ausbildungskonzeption im Taetigkeitsbereich Bibliothek, Information und Dokumentation. Zusammenfassender Schlussbericht des Projekts FIABID. Unter Mitarbeit von Thomas Seeger, Gunther Windel. Eggenstein-Leopoldshafen: Fachinformationszentrum Energie, Physik, Mathematik, 1980, p. 27.

IDEAL STAFF FOR TECHNOLOGICAL UNIVERSITY LIBRARIES

Elin Törnudd

Director of Helsinki University of Technology Libraries, Espoo

Abstract

The author gives a personal view on training and qualifications for staff working in technological university libraries. She emphasizes the importance of basic training in engineering physics and chemistry, the need for knowledge of languages and education in library and information science. Finally she suggests the option of an earlier retirement age for library staff.

The Editor requested a personal view on qualifications for library staff members. With the present gap between the available personnel resources and the mounting demands for services one is tempted to say that no qualifications are required, as long as we get extra help. This situation also prompts a dream to be able to recruit staff members with an ability to stretch their energy, working hours and patience ad infinitum, when work gets piled up. In other words, I consider traits of character more important than formal qualifications.

The present staff structure of the Helsinki University of Technology Library system, consisting of the main library, ten departmental libraries and a dozen institutional libraries, is as follows.

a)	Librarians and information specialists with required master's degrees and qualifications in library or information science	17
b)	Associate librarians with required qualifications in library or information science	7
c)	Secretarial staff with required business education	3
d)	Library assistants	19
e)	Technical staff	7
		53

A master's degree in engineering, physics or chemistry is required only for information specialists in group a). Senior and junior librarians often have their background in the humanities, although a degree in science or technology gives preference. Insight in one

scientific discipline of the university and of the library ensures job satisfaction and versatile working ability and a natural interface with the users. It is an asset in such varying tasks as reference and computer-based information service, training of users, book selection, classification, and publishing activities as well as professional contacts with the user communities.

Senior staff lacking a scientific or technological degree seem to be able to overcome the handicap, if they have joined our library early in their career or if they have a close contact with the engineering profession, for example in their parents or spouse. Those who lack previous contacts with the scientific or engineering professions often long for the opportunity to handle beautiful art or history books instead of computer printouts, and question the need for efficient service necessary in science and technology libraries.

The formal qualifications for staff members in group a) naturally include knowledge of languages. The second official language Swedish is a must as well as two or three additional modern languages. Linguistic abilities are daily required by every staff member, because 95% of the holdings are in foreign languages.

In staff groups b) & e) a salary increment is paid for every foreign language mastered.

There are two roads to professional qualifications in Finland, an academic degree in library and information science or a supplementary post-graduate course in information services, the latter offered by Helsinki University of Technology. Both avenues have, in my experience, brought about good results and are given the same weight when applicants for an office are evaluated.

A technological university library is first and foremost a service unit and willingness to serve all clients is a prerequisite to the success of the library. Ageing people often become less service-minded and more bureaucratic. Therefore library staff older than 55 years - including the director - should have the option of early retirement, unless they can be accommodated in closed stacks isolated from the clients and from the productive staff members. At present the retirement age of a civil servant in Finland is 63 years with a possibility to continue till 65.

The consequence of my early retirement dream is, that new staff members should be as young as possible, preferably straight off their graduation ceremonies.

EDUCATION FOR WORK IN SPECIAL LIBRARIES IN NEW ZEALAND

Peter Durey

Librarian, University of Auckland, New Zealand

Abstract

The basic needs for the education of special librarians seem likely to be met by the new courses to be offered by the Department of Librarianship of Victoria University of Wellington and by the School of Library Studies at Wellington Teachers' College. New Zealand may well have a special advantage as far as special librarians are concerned in the N.Z. Library Studies Certificate offered at Teachers' College since this may appeal to a group of Special Librarians who in many countries cannot take part in longer, full time courses in librarianship. The main lack in New Zealand would seem to be a properly organised and co-ordinate programme of continuing education for all librarians and not only those who work in special libraries.

The history of formalised education for librarians in New Zealand dates back to 1937 when the New Zealand Library Association (NZLA) set up its training committee but it was not until 1942 that the NZLA began a general non-graduate course for library assistants. In 1946 a Library School was established in Wellington as a division of the National Library Service. The school was originally responsible only for a one year post-graduate course leading to the Diploma of the New Zealand Library School (DipNZLS) but in 1966 it took over the course previously operated by the NZLA and principally intended for non-graduates. The qualification awarded at the successful completion of this course was the NZLA Certificate. The course structure for the Certificate was unusual. A candidate studied locally for a preliminary examination and on passing this with a sufficiently high standard was admitted to a series of three 4 week courses at Library School taken over an 18 month period. The Diploma course was similar to one year post-graduate courses in other countries except that it was taught by a division of a national library and not of an educational institution. The major problem created by this situation was that the staff of the Library School were employed under conditions of service which may be appropriate for practising librarians but were inappropriate for those who were full time teachers. In addition, a relatively small staff had to cope with the burden of two courses at different levels. Although it was generally recognised that the staff were working extremely hard to provide decent courses in difficult circumstances there was a considerable amount of dissatisfaction among members of the profession.

There were interminable negotiations for a change in the pattern of library education not helped by the fact that twice agreement had almost been reached when a change of

government necessitated the re-opening of negotiations from the beginning. At last, however, agreement was reached and from 1980 the responsibility for the courses has been separated. A Department of Librarianship has been established at Victoria University Wellington and a School of Library Studies at Wellington Teachers' College.

Selection of students for these courses differs between the two institutions. The university course will admit 45 students in 1980 and these are chosen from those who apply by a selection panel consisting of staff of the Department and practising librarians who interview candidates in a number of centres throughout New Zealand. Those candidates who have worked in libraries are said to have an advantage but this is not a pre-requisite for the course. The situation for applicants for the 120 places on the course at Teachers' College is quite different. All candidates for admission to the course must be in regular paid employment in a New Zealand library for not less than 15 hours a week and must continue in this employment until they have completed the course. In addition, all candidates at the time of their application to the course must have been employed in a library for not less than six months. Candidates will be interviewed by a selection committee but, unlike the candidates for the university course, the whole of this group will in a sense have had their suitability for library work pre-assessed since all must be currently working in libraries.

The university school, while initially offering only a one year diploma course, anticipates developing higher degree programmes. According to the school's Provisional Prospectus for 1980 "Education for library and information work is both theoretical and practical. Advances in technology are already changing the ways in which libraries and information centres provide service to their users, and these innovations in information retrieval will have a considerable impact on many facets of New Zealand's library services over the next few years. The purpose of the programmes in the Department of Librarianship will be to produce librarians with a sound understanding of the theoretical principles so that they can adopt their services to take fullest advantage of the new equipment and methods as they become available." It is intended that since this is the only graduate course in New Zealand it should provide basic training suitable for all types of library. The work for the Diploma is divided into five courses of which three are compulsory for all students. These are "The function and management of Libraries", "Indexing and Information services", "Bibliography and reference services". With the first of the courses students will have the opportunity in tutorials to make more detailed consideration of the administration of special libraries (the other options are public libraries and academic libraries).

Two further courses have to be chosen from a list of options and it is here that there occurs an obvious opportunity to provide instruction tailored to the needs of special libraries. Courses already announced include the literature and librarianship of a special

subject field, the history of the book, library services for special groups of users, and there is also the possibility of preparing a research paper. It seems fairly obvious that the course has been designed with a basic core and a very flexible periphery which can be adapted to the needs of a particular group of students. It may of course be difficult for students to articulate their needs if they have not any experience of librarianship but it seems likely that a high percentage of students will come to the course having worked for at least one year in a library and that a minority of them will have special library experience. Whether the school will in fact provide a course which is suited to the needs of special libraries is too soon to judge since the first course does not begin until March 1980 but the indications are hopeful.

While the university course is very similar to one year post-graduate courses offered in other countries such as Australia, Britain and North America, as far as I am aware the course which is to be run by the School of Library Studies at Wellington Teachers' College has no exact parallel in any other country. The course which will lead to the New Zealand Library Studies Certificate replaces the previous NZLA Certificate programme of intermediate training intended to provide a qualification in library skills for those currently employed in libraries.

The first course begins in 1980 and according to the prospectus the aims will be

"1. To provide a general programme of intermediate training in library studies which will produce librarians with basic qualifications suitable to a range of libraries in New Zealand.

2. To provide students with the knowledge, skills and techniques of librarianship and to relate their practical experience to these.

3. To develop an understanding of the principles and practices of librarianship as a basis on which further experience and continuing professional education can be built."

The most unusual feature of the course is that it comprises three six-week sections of full time study totalling 18 weeks in all. Thus students from all over New Zealand will go to the school in Wellington for these three separate sessions spaced over a period of 20 months. Most employers are expected to give staff members leave with pay to attend the course and in addition some employers will give financial assistance with accommodation costs.

As well as the periods of formal instruction at the school in Wellington, students will be expected to complete various projects between sections, i.e. while students are working in libraries.

The contents of the new course have not yet been finalised. However, it seems certain that the students will have a unit where one of the options will be special libraries and it is expected that some of the other optional units (such as information retrieval or specialised forms of indexing) are likely to be of particular interest to those working in special libraries. It is also hoped to introduce a unit on the management of small libraries and this again should attract special librarians since so many of them do come from institutions in this category.

It seems likely that a sizeable number of special librarians will in fact take the NZ Library Studies Certificate course. The evidence for this is derived from the library background of students attending the NZLA Certificate course which the new course replaces. Whereas ten years ago very few special librarians took part in the NZLA Certificate course, the numbers have steadily grown and in recent years amounted to as much as 20% of the class. (The size of the class is limited to 120 students so that, if past experience is a guide, about 24 of these might be expected to originate from special libraries).

While it is very likely that some of the students on the Diploma course at the university will at the conclusion of the course obtain posts in special libraries, New Zealand does seem to have an important advantage over some other countries in the training of special librarians. This is because the Certificate course seems likely to attract some of the people who come into special libraries from a variety of backgrounds without library training and who see the need to obtain basic training in the skills of librarianship. Probably the majority of these people would not or could not contemplate a full year at the university library school but the 18 week "sandwich" course at the Wellington Teachers' College may well be feasible. A number of employers, particularly government departments, are accustomed to the concept although it will be interesting to see whether the extension of the course to 18 weeks (under the old NZLA arrangements it was 12 weeks) will have an effect on employers' willingness to allow their employees paid leave to attend the course.

I hope that it is clear from this description that major changes are occurring in the pattern of education for librarianship in New Zealand and these should prove beneficial for libraries in general and special libraries in particular. Under the previous arrangements those teaching courses were so overloaded that it was impossible to give any detailed attention to the special needs of any particular groups of librarians (although the need was recognised and some attempts made to meet it). The new arrangements provide greater resources in teaching and in various ancillary services, and special librarians are likely to be a group which benefits largely as a result. For example, teaching library automation has in the past been rather sketchy. The new university school will have two terminals linked to the university computer and as well as its own staff resources will be able to call on those of the university Computing Services Centre.

So far I have been concerned only with formal and basic education. It has been realised in a number of countries that there is a need for a lively and well organised programme of continuing education so that practising librarians can up-date their professional knowledge. The need has been recognised in New Zealand and the Education Committee of the NZLA now that it is not greatly involved in basic courses (which it was in the past) sees its role as the development of continuing education. Unfortunately, it has not so far even proved possible to devise a means of making sure that local efforts are fully publicised at a national level and there is certainly no national programme. The university school has already mentioned an interest in developing continuing education programmes but in the short term it seems likely that it will be completely occupied in developing a full time course. So what seems likely to happen for the time being is what has happened in the past, that continuing education will depend on local initiative. One interesting development has been the activities of the Special Libraries Section of the NZLA. This is obviously taking the need for continuing education programmes for special librarians extremely seriously. During 1979 the section was responsible for a national seminar on "Minicomputers in Libraries" and early in 1980 is sponsoring seminars on computer based information services. The Professional Division of the NZLA has also entered the field with seminars on official publications and non-book materials. A major lack at present is any kind of co-ordinated national calendar of forthcoming events. The (British) Library Association includes this in the Library Association Record and the Library Association of Australia provides a particularly good model with its monthly publications "Happenings: a regular diary of meetings and events" and "Quidnunc - quid what, nunc now: pretending to know all that passes, busybody, newsmonger". In New Zealand the NZLA newsletter "Library Life" does not include sufficient information of this kind but unfortunately it seems to be very difficult to remedy this.

To summarise, the basic needs for the education of special librarians seem likely to be met by the new courses to be offered by the Department of Librarianship of Victoria University of Wellington and by the School of Library Studies at Wellington Teachers' College. New Zealand may well have a special advantage as far as special librarians are concerned in the N.Z. Library Studies Certificate offered at Teachers' College since this may appeal to a group of Special Librarians who in many countries cannot take part in longer, full time courses in librarianship. The main lack in New Zealand would seem to be a properly organised and co-ordinate programme of continuing education for all librarians and not only those who work in special libraries.

EDUCATION FOR INFORMATION INTERMEDIARIES. AN EXAMPLE FROM THE SCHOOL OF INFORMATION STUDIES, SYRACUSE UNIVERSITY, N.Y.

Gunnel Hessler
Head of Information and Documentation Centre,
Royal Institute of Technology Library, Stockholm, Sweden

Abstract

The author comments, from personal experience on education for information intermediaries at the School of Information Studies, Syracuse University, U.S.A. A brief presentation is given of a number of courses: Management Principles for Information Services, Information Management, Network Management, Library Automation, Basics of Computer Retrieval Systems, Evaluation of Information Systems, Interpersonal Communication and Advanced Topics in Information Transfer. The author concludes that Schools of Library & Information Science should follow development in the professional fields closely and adapt their courses to these developments.

Being a professional in the information and library field today can be very challenging and stimulating. New and better products and services are constantly introduced and advanced technical equipment makes it possible to concentrate on the essential and creative parts of the information transfer process. But there are also warnings and a sense of pessimism. Will the technically advanced society really need information intermediaries and if so, which will be the best educational background for the people who hold these jobs to have? It is difficult to know how to plan one's education today, so that it will be useful forty years or more in the future. As in many other professions, individuals who plan a career in the library and information field should be prepared for the need to be re-trained.

It is also very important that educational institutions be flexible enough to absorb new ideas and developments within the information field in order to continuously offer the best possible education. These institutions should be places where students on their ways to different information professions can meet and share parts of an educational program, influence each other and hopefully preclude future misunderstandings and destroy prestige, of which there is too much today.

One institution, which seems to have come a good bit along the way to becoming like the model described above, is the School of Information Studies, Syracuse University, N.Y. Through a scholarship from the Swedish American Foundation I had the opportunity to spend one year at this school. It is one among an increasing number of library schools which have gradually broadened their educational programs in accordance with new

demands from the information and library field. I will give some comments on my education in Syracuse.

For a Master of Library Science degree (this title was still in use 1979 in spite of the fact that the school changed its name in 1974 from School of Library Science to School of Information Studies, and also in spite of its goals to educate not only librarians but also information professionals working within many different fields) the student may and is even urged, to assemble 15 of the 36 compulsory credits from other schools at the university such as School of Management, School of Communication or School of Economics. This makes it possible to get a deaper and more specialized education in areas of special interest where there is a need for it. Of the courses at the School of Information Studies some are offered each semester, while others are available only once a year or even more infrequently depending on the demand and the availability of teachers. A total of more than fifty courses is offered, of which about ten are run each semester. Their quality differs of course, depending not only on the subject as such, but also on the teacher, the literature and not least the selection of students. Many courses have a long tradition and are well designed, while others, covering new areas and developments, are marked by some uncertainty as to how to bring the knowledge into practice. On the other hand these courses force the student to think more independently and creatively and not only follow well-worn paths and do what he or she is expected to do.

There is no theses requirement, which on the other hand means that in nearly all the courses there is a more or less elaborated paper to be written.

I will also mention briefly that the Doctoral Program at the school is in Information transfer and is designed to prepare researchers, teachers and system designers and managers whose central concern is information, its transfer, effect and utility.

Among the courses in management I took, Management Principles for Information Services was a course of general and elementary skills, which reflected and gave examples from the library world. It gave a good perspective for someone having some previous professional experiences. Another course, Information Management, dealt with where and how an information manager could work. This profession or at least its name is rather new and very much on the upswing. Network Management focused of course very much on U.S. National Information Systems Planning, but also spread ideas of how to build up cooperative and economical systems in already existing library organisations and institutions.

Library automation in the U.S.A. today has been dominated and very much influenced by the OCLC and RLNS systems, and the discussions in the course Library Automation were

mainly concentrated on these systems. But also COM-catalogues, automated circulation systems, IR-systems and system analysis in connection with library automation were studied. The course also stressed the psychological aspects and the need for diplomacy when overwhelming a library staff with technical equipment and automation.

In the course Basics of Computer Retrieval Systems each student had to design and program an interactive bibliographic search system. The programming language was APL. This work trained the student to look upon an IR-system also from the input side and realize what such a system can and cannot do.

It goes without saying that after the development and implementation of an automated library system an evaluation of the result has to follow. Especially since the implementation very often has to be done in adverse and aggressive surroundings. However, it was evident from the course Evaluation of Information Systems that reliable evaluations of traditional library routines and user attitudes are very rare in the Literature. This can partly be explained by the fact that studies of this kind will face two difficult problems. First, how is the group 'potential users' to be defined and reached? This group could probably provide many of the answers to the questions of why policies, routines and services fail. Secondly, how are the positive aspects on information service to be measured? For example the number of times a book is circulated tells very little about how often it is read and still less about whether it has given anything of value to the readers. Illuminating these problems will also help to throw light on the discussion of whether or not to have library fees.

Another aspect of information transfer is the psychological process behind information seeking. In courses like Interpersonal Communication and Advanced Topics in Information Transfer this problem was studied both from social and individual points of view. But the difficult yet important problem of how to define and correctly transfer an information problem to another person was only briefly touched upon.

I have here only been able to give some examples of courses and aspects of the educational process which I myself experienced. The rich and varying selection of courses gives each student an education that should very well suit her or his professional ambitions. What I particularly missed was more emphasis on courses in marketing information services and training the students in defining the information problem or search question.

The information intermediary today is in a difficult situation, constantly supplied with new products and services. Private firms and information brokers will be a threat to small public and research libraries. Therefore marketing courses should be as widely available as courses in cataloguing and online retrieval. They could also give librarians better self-esteem and professional pride.

Another area which should be more penetrated when training information intermediaries is their capability to get the questioneer to define his or her problem. In order to really understand and retrieve what is asked for, this is the most essential part of transferring information. This also points to a problem, relevant in most libraries and information centers, the lack of subject specialists, especially in the natural sciences and technology. These intermediaries should have a better chance to understand and discuss search questions within their fields of specialization. Library and Information Schools should more actively try to recruit students with this kind of education.

What most impressed me at the School of Information Studies was their open attitude to new and untried aspects in the educational programs, their willingness to give each student his or her master's degree, designed in accordance with his or her own interests and professional ambitions. Schools should follow development in the professional fields closely, not create barriers by having rigid and inflexible programs, which is too often the case today.

Announcing a New Journal...

Material Flow

An international journal devoted to all aspects of movement, handling and storage in manufacturing, distribution and service industries

Editor: Prof. R.H. HOLLIER, *Umist, Manchester, U.K.*

Scope:
- Analysis and design of flow systems
- Handling and storage of materials
- Movement of materials through the flow cycle
- Design of handling and storage equipment
- Human factors in material flow
- Overall management of material flow systems

For more information and a free sample copy contact one of the addresses below

Subscription Information:
1981: Volume 1 (in 4 issues) – US $83.50 / Dfl. 163.00 including postage

ELSEVIER
P.O. Box 211,
1000 AE Amsterdam
The Netherlands

52 Vanderbilt Ave.
New York, N.Y. 10017

TRAINING JUNIOR STAFF IN A MAJOR RESEARCH LIBRARY FOR SCIENCE AND TECHNOLOGY

Peter Warren & Dennis Shaw
Deputy Keeper of Scientific Books Keeper of Scientific Books
Radcliffe Science Library, University of Oxford, England

Abstract

The methods employed in training junior staff to assist readers are related to the stock of literature, the catalogues, bibliographic sources and reference works in the Radcliffe Science Library. The needs of the academic reader are discussed and the experiences gained from a recent study of reader behaviour of clinical and pre-clinical medical researchers match those reported by Grogan.

Shortage of senior staff has made it imperative to train juniors in the basic principles for assisting readers; this has been possible because of the high calibre of persons available for this level of employment in Oxford University. The plan of the lectures for an 18-hour training course is outlined and some of the elements are discussed in detail. Emphasis is placed on the rewards to the individual, in the enjoyment and job satisfaction obtained from doing well the task of assisting highly qualified scientists in their search for information. This section of the paper concludes with the enumeration of nine important precepts which can form the basis for success in dealing with queries from readers.

Finally, there is an outline of the tests employed to judge the effectiveness of this training. It is suggested that there is need for more development of this aspect of the training course.

---

1. Introduction

The standard of assistance to readers in any library depends on the provision of adequate bibliographical aids and the ability of the library staff to use those aids effectively. This may sound like a truism, but the longer one spends in reference work the stronger the evidence becomes that books are not used effectively, even by those whose occupations necessitate their visiting a library on most days of the working week. Readers of this paper will have non-librarian friends who own small private collections of books with whose contents they might be expected to be familiar, and yet often do not realise that a piece of information they need is in a reference book or comprehensive treatise that is on their own shelves. One of us (PJRW) worked for some time in a small industrial library and, to his chagrin, on several occasions discovered features of which he was unaware in highly specialised reference works that he had used frequently over several years. It is not surprising therefore that untrained library staff cannot use a large reference collection to anything more than a small fraction of its full potential. In a library as comprehensive as the Radcliffe Science Library, a lifetime is not long enough for an individual to gain a complete knowledge of the contents of its numerous reference works.

A course of training for inexperienced staff has therefore to be highly selective in its coverage of reference works. Before describing the staff training programme and its relevance to the work of assisting readers we give a summary of the library's stock, staff and readership.

2. The Radcliffe Science Library: stock

2.1 Early acquisitions

The first books were purchased for the Radcliffe Library (as it was then named) two hundred and thirty years ago. Clearly the stock of literature in the library has been determined by policy over a long period of time. The early history of the library, when it collected 'modern' works in all subjects, has been recorded before. [1,2] From 1811 until 1927 acquisitions comprised purchased and donated works in natural sciences, technology, mathematics and medicine. During this period the policy on acquisitions was influenced by the existence of libraries in some of the University science departments, notably Botany, Agricultural Science, Astrophysics, Entomology and Ornithology. [3]

Many notable publications in these subjects during that period were acquired by the appropriate department instead of the Radcliffe Library and this represents one of the earliest examples of inter-library co-operation. During recent years, many of these early works which have become antiquarian and have increased in value have been transferred to the central university library.

2.2 The Bodleian Library

In 1927 the Radcliffe Library was placed under the care of the Curators of the Bodleian Library and renamned the Radcliffe Science Library to emphasize its role as the central university library in scientific subjects. During the subsequent few years the Curators transferred all the post-1884 scientific books, including the copyright deposit, to the Radcliffe Library bookstack and it has benefited ever since from the copyright deposit. As a result this scientific collection has assumed a national importance and this is recognised by its having become a back-up library to the British Library Lending Division at Boston Spa.

2.3 The stock of literature

The current stock is summarised in Table 1.

TABLE 1

Form	Volumes	Notes
Monographs	200,000	British and foreign (mainly European and North American)
Theses	200,000	From European universities
Serials	300,000	Covering 9,000 current titles and a further 10,000 titles which have ceased publication

The monograph collection includes all books in science and technology, mathematics and medicine published in the U.K. The collection of theses has been built up as a result of exchange agreements with many of the universities in Europe: there is an especially good coverage of 19th century dissertations from the older universities.

2.4 Catalogues and Indexes

The main catalogue contains author entries for all the monographs including a major portion of the monographic series which are catalogued analytically. This comprises about 250,000 cards which are filed in alphabetical sequence according to rules established in the Bodleian Library in 1939. [4] Works of corporate authorship are entered under a heading giving the sponsoring body where this is identifiable, e.g. "International Union of Pure and Applied Physics".

There is a union catalogue of serials containing 33,000 entries which includes the location of all scientific serials in the science departmental libraries of the university as well as the central library holdings. This catalogue exists in machine readable form as well as in card form. An early edition was published in 1970 in book form. [5] The entries follow the World List of Scientific Periodicals both in style and arrangement. Full details of this union catalogue have been given in reference 1.

No complete separate catalogue of theses held by the Bodleian Library and its dependent libraries exists. Some of the earlier scientific theses are entered in the main RSL catalogue and the most recent ones (post 1970) are entered in Dissertation Abstracts International Section C. Oxford University theses are separately entered in a special catalogue maintained for the purpose, as the Radcliffe Science Library is the official University repository for all Doctoral theses in scientific and medical fields as well as Master of Science theses since 1971.

There are two keyword indexes. The first contains 36,000 entries and is based on the periodicals titles catalogue. The other index serves as a guide to conferences and symposia and contains 20,000 entries.

2.5 Reference Collection

The Library's open-shelf reference collections are concentrated in three areas. The largest and most comprehensive is in the Entrance Hall, but there are substantial subject collections in the Life Sciences and Physical Sciences reading rooms close to the service desks. Abstract journals are shelved with the periodical collections. A considerable number of older reference works, which are still of use on occasions, are in the bookstack.

The 1,050 volumes of the National Union Catalog comprise the Library's largest bibliographical aid, and these are shelved in the Entrance Hall next to the British National Bibliography, the Cummulative Book Index, the U.S. Government Publications Catalog, the British Museum Catalogue of Printed Books, the British Museum Subject Index and the Library of Congress Catalog (Books: Subjects).

Alongside these many-volume works are shelved an array of the catalogues of 50 or so specialist libraries, ranging from the Index Catalogue of the Library of the Surgeon-General's Office to such works as the Dictionary Catalog of the Water Resources Center Archives, University of California and the Catalogs of the Glaciology Collection, Department of Exploration and Field Research, American Geographical Society. Most of the major scientific periodicals catalogues and article indexes are also on display, including the very useful Royal Society Index of Scientific Papers and J.C. Poggendorff's Biographisch-literarisches Handwörterbuch der exakten Naturwissenschaften.

General and technical language dictionaries (covering 31 languages) are shelved next to biographic dictionaries. A full run of all sections of the Science Citation Index is also in the Entrance Hall, and there are good holdings of trade, telephone and learned society directories.

3. Library's Staff and Readers

3.1 University Scientific Staff

There is a large staff of scientists in the science departments of the University, engaged in teaching and research. Approximate numbers in the various categories are shown in Table 2.

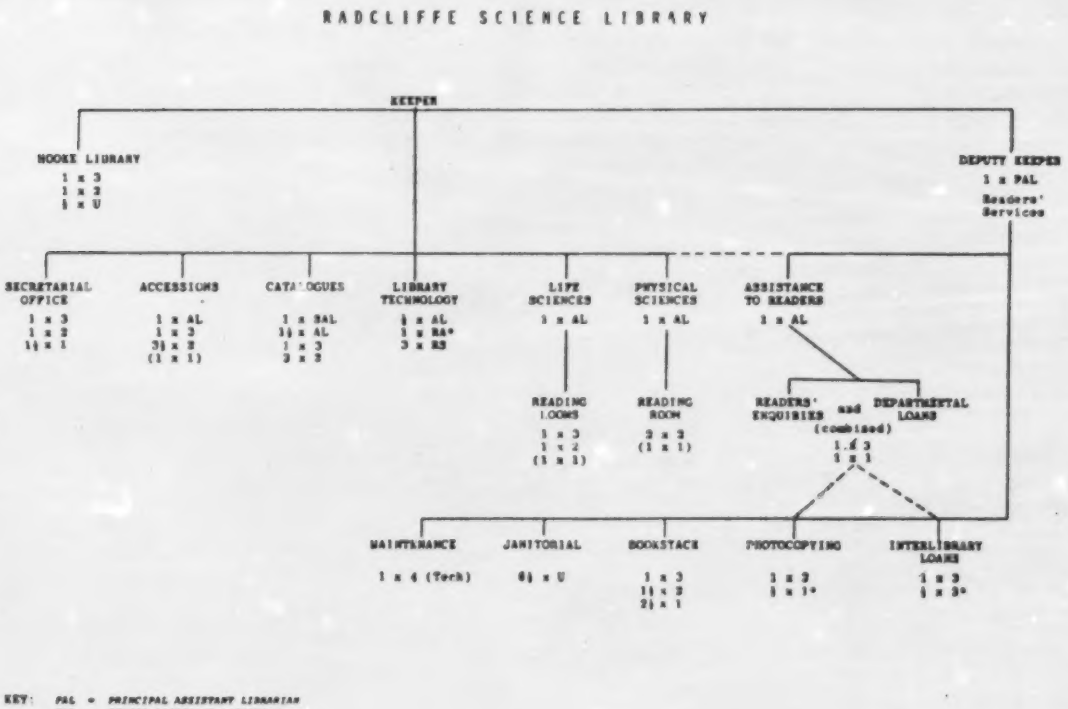
TABLE 2

Category	Natural science and technology	Clinical medicine
Staff	450	400
Post-doctoral researchers	150	300
Students reading for science degrees	5,000	200
Total in residence	6,500	
Former readers	25,000	
Visitors and external readers	500	
Total	32,000	

Staff plus post-doctoral researchers amount to a total of 1,300 roughly divided equally between medicine and non-medical fields. Nearly all the students reading for degrees in science are non-medical and it will be noted that the total resident population served by the library amounts to 6,500. Visitors to the University from home and overseas bring the total to 7,000. It has been explained before [1] that these scientists have access to departmental libraries for their core literature and the students have access to college and university lending libraries to service their needs for textbooks. The Radcliffe Science Library is primarily a reference library of last resort for the majority of readers and this role must be emphasized in staff training.

3.2 The Library Staff

The administrative structure of the library is shown in the diagram in figure 1.



KEY: PAL = PRINCIPAL ASSISTANT LIBRARIAN
SAL = SENIOR ASSISTANT LIBRARIAN
AL = ASSISTANT LIBRARIAN
RA = RESEARCH ASSISTANT
2½ x 2 = 2½ LIBRARY ASSISTANTS GRADE 2, etc.
RS = RESEARCH STUDENTS
(1 x 1) = WORK EXPERIENCE TRAINEES
U = UNGRADED STAFF
* = EXTRA STAFF

FIGURE 1

The relatively low proportion of graduate - or academic-related staff should be noted. There are nine such posts academically related as shown in Table 3.

41

TABLE 3

Post	No.	Academic equivalent
Keeper of Scientific Books	1	Professor
Deputy Keeper (Principal Assistant Librarian)	1	Reader (Associate Professor)
Senior Assistant Librarian	1	Senior Lecturer
Assistant Librarian	6	Lecturer (Assistant Professor)

These academic-related staff are in charge of the main divisions of the library activity but a great deal of the dialogue with readers is conducted by their assistants. The Radcliffe Science Library is fortunate in having a large pool of well qualified personnel to recruit from in filling these library assistant posts. Many of them are graduate wives whose husbands are reading for higher degrees in the University. This has the advantage of providing a better qualified staff than might otherwise be possible but it has the disadvantage that these assistants remain only for an average of two years. The proportion of graduates (or equivalent) amongst the junior staff is shown in the Table 4.

TABLE 4

	Graduate	Non-graduate
Senior Library Assistants	2	6
Junior Library Assistants	7	7

It will be noted that the majority of senior library assistants are non-graduates. These seniors achieve a high level of competence in giving assistance to readers and frequently occupy the main enquiry desk where readers first seek advice.

4. Assistance to Readers

4.1 Needs of the academic library user

In drawing up a programme for a staff training course it is first necessary to consider the needs of library users. No rigorously controlled general survey of use of the Radcliffe Science Library has yet been conducted and the assessment of readers' needs had to be based at first upon general impressions gained by the course tutors during many years of reference work. On the whole these impressions matched those described by other

university librarians, and we were fortunate in also being able to discuss some of our ideas with one of our research students, Mrs. Virginia Brember, who recently embarked upon a programme of research into the information needs of workers in Clinical Medicine, [6] and has spent a considerable number of hours in the Radcliffe Science Library interviewing people working in that field. We are pleased to record that her observations of reader behaviour in the Entrance Hall matched closely the findings summarised in Chapter 4 of D. Grogan's 'Practical reference work' [7], which was published shortly after her investigations began in 1979.

Academic readers generally enter a library with a fairly precise idea of what they have come to find, and are generally armed with authors and titles of those items. The quest for general information on a specific subject, while not unusual, is considerably less frequently undertaken. Virginia Brember suggests that the readers' expectations modify both their behaviour in the library and their impression of its value. For example, the academic expects to be able to use the library's catalogue unaided in the first instance. He rarely has much knowledge of filing rules, classification schemes, or card layout, but feels that because he is a regular user of books he should be able to find what he wants from a catalogue without difficulty. Virginia Brember found that readers felt quite strongly on this matter, presumably because they thought that a familiarity with books and journals automatically conferred the modest skill necessary for the effective use of a catalogue. The observable facts sadly indicate that most readers do not possess that modest skill, and can become quite distressed when they lose their way among the cards or at the shelves because they have misunderstood a reference or added entry.

Academic readers often avoid asking questions of the staff, despite their frustrated attempts at self-help. Some reasons for their reluctance to seek help are:

(a) Shyness.
(b) Unfamiliarity with the staff - unavoidable in a large library with long opening hours and constant changing of personnel at the enquiry desks in the Entrance Hall.
(c) Unwillingness to disturb the librarian who is apparently already engrossed in important clerical work.
(d) Fear that the question will be regarded as foolish.
(e) The assumption that the librarian will be unable to help because of a lack of appropriate subject knowledge.

These attitudes, while regrettable, together constitute a serious barrier between the user and library staff and a training course must take them into account and include suggestions as to how they may be overcome.

4.2 Staffing problems at the Radcliffe Science Library

As has already been indicated in the general information on the library, the number of senior academic staff available for reader assistance is strictly limited. The Entrance Hall rota, in fact, only allows one senior academic to man the main enquiry desk, and at busy times this level of staffing is quite inadequate. Junior staff must be called upon for help, and they may find themselves attempting to deal unaided with bibliographic problems presented by scientists of international standing. A training course for such staff must therefore take into account the sheer difficulty of the problems that they may face, and supply some criteria by which they can judge when to keep on with an investigation and when to call for assistance from a more experienced member of staff.

In ideal circumstances junior staff would be able to work at an enquiry desk alongside an experienced senior, handling simple enquiries at first and proceeding, under supervision, to more complex problems. Supervision should be available at all times because so often the apparently simple search (e.g. finding the latest address of a scientist) leads the information worker down many blind alleys and finally requires considerable tenacity as well as skill to complete successfully.

4.3 Idiosyncrasies

Difficulties for new staff are increased by the manifold complexities of location of material in the Bodleian Library system. Shelf-marks alone, which are of bewildering variety, can be extremely misleading and it is all too easy for an inexperienced assistant to send a reader out into the rain to walk two hundred yards to another building only for him to discover there that he must return to the place where he first asked his question. Many subjects are split between the Radcliffe Science Library and the Bodleian. For example, the Bodleian holds the literature on the educational aspects of psycholgy, the social aspects of ecology, the manufacturing aspects of chemistry, to name but a few. Somehow, without involving the classes in confusingly detailed explanations, a training course must touch in passing on these Bodleian idiosyncrasies and prepare the trainees for the difficulties that may arise if they do not keep them constantly in mind.

It has been gratifying to be told by new members of staff who, though already holding professional qualifications in information science, chose to attend our classes, that they found this part of the course particularly useful.

5. The Training

5.1 Plan of the Course

A course of twelve lectures, designed to last about 45 minutes each, was announced and library assistants (senior and junior) were invited to attend. Classes were deliberately

kept small, and no more than six attended any one session, in order to ensure an informal atmosphere and encourage uninhibited discussion. The sessions all took place at the beginning of the working day when the library is least busy and staff are at their freshest.

The order of lectures was as follows:

Lecture 1 : Historical introduction to the Radcliffe Science Library.
Lecture 2 : Tour of the Bodleian Library.
Lecture 3 : Introduction to reference work.
Lecture 4 : The Radcliffe Science Library and Bodleian Library catalogues and the keyword indexes.
Lecture 5 : Computer-based cataloguing.
Lecture 6 : The World List of Scientific Periodicals and BUCOP.
Lecture 7 : The BLLD List of Current Serials, the Union List of Serials, New Serial Titles and Ulrichs.
Lecture 8 : The British National Bibliography, the National Union Catalog, and Subject Catalogues (LC and BM).
Lecture 9 : Chemical Abstracts, Biological Abstracts and Index Medicus.
Lecture 10 : The Science Citation Index.
Lecture 11 : Tracing conferences: R.S.L. indexes, BLLD lists, Interdok etc.
Lecture 12 : On-line Retrieval Services.

5.2 Themes of the Introduction

Lecture number 3, entitled Introduction to Reference Work, is in many ways a key lecture and indeed, in the second course this lecture was promoted to first place in the series. Its themes, which all deal with the practical side of reference work, were repeated throughout the rest of the course, and in the hope they may be of interest we will set them out in some detail.

The lecture itself is given in a somewhat lighthearted manner and contains a good number of illustrative anecdotes. Too many lectures on reference librarianship are mere lists of details of bibliographies, ponderously delivered and drowsily heard, and it can hardly be claimed that on first acquaintance there is anything exciting about a complete run of Chemical Abstracts or a catalogue with a million entries. The image of the librarian as a humourless pedant also has to be exorcised at the opening of the course: young people have a positive fear of the desiccating effect of the good life among books, and they must be assured that reference work can afford a genuine experience of what is now called job satisfacation.

The lecture begins with a clear warning that it is largely a recital of personal opinions, and that it is an attempt to persuade the class that reference work is enjoyable. What makes it enjoyable? The reasons advanced are fivefold:

(a) It boosts the ego. There is pleasure to be derived from the knowledge that one can help, can be useful to other people who often express the appreciation in gratifying terms.

(b) There is the feeling that one is aiding the cause of scolarship and science. The Radcliffe Science Library is a great library and it is a privilege to be able to help its readers, many of whom are scientists of international reputation.

(c) There is the joy of the hunt. Successful tracing of an obscure and defective citation, sometimes no more than a misspelt surname and an inaccurate title, can give rise to considerable elation, especially after one has exercised one's ingenuity. Inspirations and intuitions akin to those experienced by a detective can often save a great deal of time and relieve one of lenghty systematic searching of book after book until one finds the answer. It is worth pausing here to remind the class that there is occasionally a commensurate feeling of frustration when one realises after a gruelling search of all possible sources, that one can do no more and that one has failed to produce the information required.

(d) Most important is the steady development of a genuine professional skill. It seemed at one time to us that almost anyone could do reference work - it required only average intelligence, attention to detail and the use of common-sense. Maybe these are the only requirements, but one has only to look at many inter-library loan requests to realise how poor must be the bibliographical knowledge of many library assistants. It is impressed upon the class that they can make themselves quick, dextrous and accurate or remain slow, clumsy and careless if they do not consciously try to improve their art.

(e) Lastly, one never ceases to learn. There is always another helpful little book to discover, a new way of using a bibliographical aid, a new area of subject knowledge to map, a new science that is being developed. No librarian need ever be bored if he or she chooses not to be.

The next section of this lecture deals with the qualities that a reader's assistant should possess. The author puts first the necessity for enthusiasm, and warns that it cannot be put on like a garment: it comes from within. But it can be cultivated from very small beginnings, and increases as one gets better at the job.

The class is urged to take every opportunity to learn. In particular they are urged not to walk away when they hand over a reader and his enquiry to a senior member of staff, but to stay if possible, and see how the problem is solved - if indeed it is solved. They are urged also to use quiet periods at invigilation desks in the reading rooms to look closely at reference books and assess their scope and uses.

5.3 Important precepts

The members of the class are then asked to write down the following important precepts:

(1) Gain the reader's confidence. The reader behaviour outlined in Section 4.1 is discussed and ways of making library users feel at home are suggested. The necessity of appearing alert and anxious to help is of absolute importance.

(2) Use the catalogue. Too many enquirers are taken away at once to consult reference books, because the assistant assumes that the reader has already consulted the catalogue correctly. But readers often look for books in periodical catalogues and vice versa, and seem blithely unaware of the difference between the types of entry on the cards they are consulting and the types of work they were seeking. Often it transpires that they have not looked in the catalogue at all.

(3) Never believe the reader. This harsh advice may be expressed alternatively and less cynically as Go and look for yourself. It refers in the main to catalogue use. In about half of the instances where a reader states that a work is not recorded in the catalogue, the assistant can find a correctly filed entry for the work in question that the reader has somehow missed. In many other cases the reader has been looking under an inappropriate heading.

The class is warned against the assumption that the reader's inability to use the catalogue correctly implies some moral or intellectual defect in his make-up, and they are taken to the catalogue and given some rather awkward headings to locate for themselves (e.g., J.B.S. HALDANE SYMPOSIUM, C.R.C. HANDBOOK, HOSPITAL-ACQUIRED INFECTIONS, JAMES F. LINCOLN ARC WELDING FOUNDATION, &c.). Such examples soon convince the class that the card catalogue is not always easy to use, and that readers have a right to expect help from staff if they do not find at once an entry for the work they are seeking.

(4) Find out what the reader really wants to know. It is surprising how frequently, even in academic libraries, enquirers do not state their problem explicitly. The crude example is cited of the reader who asks where the books on history are shelved when he really wants to know the date of the Battle of Hastings. If he is totally ignorant of English history he may wander up and down the shelves for a long while, when, if

he had stated his exact need he could have been handed a dictionary of dates from the quick-reference collection, and have found the answer in 20 seconds.

This theme is developed with a number of illustrative anecdotes, because it is an important problem in reader assistance which is often incompetently handled even by experienced staff. Any questions, even the most innocent, can hide the reader's real needs. A reader at the Radcliffe Science Library asked at 6.30 p.m. what time the main Bodleian Library closed. He was told 7 p.m., but was immediately asked why he wished to know. He replied that he wished to see some anthropological periodicals, which he had assumed were in the Bodleian. The assistant took him to the catalogue, where a few moments of consultation confirmed that the periodicals were in fact in the Radcliffe Science Library, only a minute's walk from where he was standing. Had he been given only the simple answer to his question he would have made a fruitless journey to the Bodleian, and as it was near closing time, have had to wait until the next day to return to the Radcliffe Science Library.

(5) Get the reader to reveal the source of his reference, if there is the slightest difficulty in tracing it. In many cases it will be found that the reader has either transcribed it wrongly at some point, or omitted some important piece of information. The class is warned to be particularly on guard against assuming that a citation refers to a book when it refers in fact to an article in a periodical or a paper given at a conference.

(6) Read the small print in an entry. This is really an instruction to read the whole entry. Very often a vital piece of information is tucked away towards the end of an entry, particularly in a series note. The class are shown a volume of the National Union Catalog and asked to observe the frequent occurrences of series notes. Very often a NUC entry will be for an item which is a part of a Radcliffe Science Library periodical which has not been analytically catalogued for the library's main catalogue. The class is warned that attention to detail is essential in reference work and that therefore it cannot be rushed. When a long search is obviously in the offing, it will be necessary to send the reader away. It is essential not to let him depart until all information has been elicited - what is really wanted, the source of reference and (so often forgotten) his name and address and telephone number. It is emphasised that in turn the enquirer must be given the assistant's name and telephone number. It is very easy for several assistants to search for the same item simultaneously because an enquirer has returned to the library and, being unable to identify the person who was originally helping him, has set the enquiry in motion again with another assistant who has to start from the beginning.

Advice is also given on the correct way to take a telephoned enquiry, with insistence on getting the enquirer's name right. It is sad how frequently young but inexperienced ears cannot distinguish between a capital S and a capital F and an enquirer called (say) Faxon becomes Saxon.

(7) Narrow the area of search. If someone is asking for a work by Smith and Zybsko, and the initials of neither author are known, there is no point in searching a whole catalogue-drawerful of Smiths when there will be very few entries under Zybsko in the Z drawer.

(8) Do not waste time. Many librarians have to spend time at a desk in reading room invigilation. At such time it is easy to sit staring about or even looking at a paperback novel. It is better to take a reference book from the shelves and look at that, to read its preface, discover its cope and its up-to-dateness, and to test it if possible with a question to which the answer is already known.

The reference collections in the reading rooms of the Radcliffe Science Library contain a good range of technical dictionaries and encyclopaedias, and the class are also advised to enlarge their scientific vocabularies, trying never to let a subject word that they meet during the day whose meaning they do not know go by without checking in an appropriate work, and, if possible, ascertaining where that subject fits into the total scientific system.

The last precept applies in particular to the Radcliffe Science Library.

(9) Always start each search by assuming that the library holds the information or the book or article required. This rule is important because the library's collection is so comprehensive. It must especially be borne in mind when dealing with 18th or 19th century items. Members of the class are advised to avoid telling readers that what they want is not in the library, until they have enlisted the aid of a senior member of staff. Even if the Radcliffe Science Library does not itself hold the item it may, if it is in one of the subject fields indicated earlier in this article, be in the Bodleian Library.

6. Feedback

6.1 Effectiveness

How effective have the training courses been? It certainly seemed to at least one course tutor that the class members were as attentive as he could possibly have hoped that they would be. Notes were taken unbidden and the questions were relevant. Each member of

the class insisted that the lectures had been interesting and helpful, but it was important for tutors to have a clearer idea of how much of the instruction had been retained.

It did not seem advisable to set an examination at the end of the course. There was no certificate of any kind that could be awarded, sufficient staff time was not available and, most important, the performance in such an examination would have been powerfully affected by the everyday duties of each examinee; those working in one of the reading rooms would obviously have had a great advantage over those working at "back-room" tasks such as periodical registration, photocopying and the like.

6.2 Testing

Quite early in the course short test questions were introduced unannounced during class sessions, based mostly on matters treated in the previous session. These questions were in general answered correctly, but it was disappointing that at a few weeks' distance from a session similar questions were not so well answered, particularly, as expected, by those whose duties had kept them away from enquiry desks. Furthermore, there was ample evidence that even those who worked at enquiry desks sometimes forgot the maxims so heavily emphasized in the third lecture, particularly the first two, and a great deal of unnecessary searching of reference books was undertaken because the reader's information was accepted without question and the catalogue was not re-consulted.

7. Conclusion.

Further testing needs to be done, but our experience already seems to confirm that the best way to teach reference work is to employ in the main the heuristic method. Each member of the class should spend several hours each week at an enquiry desk, putting into practice the precepts imparted using the reference works described, initially under fairly close supervision. A course of lectures cannot of itself do more than point out to the aspiring reference librarian the right path to follow. There is no substitute for experience: with Chaucer (and Hippocrates) we must accept: "the craft so long to lerne". Perhaps we can end this article with the first words of D.W. Grogan's 'Practical reference work' - "There is only one satisfactory way to learn the art of reference work, and that is to do it".

8. References.

1. SHAW, D.F. Co-operation amongst the science libraries at Oxford University. In: Fjällbrant, N. ed. Proceedings of the 8th meeting of IATUL (Enschede, May 28 - June 1, 1979). Göteborg, 1980, pp. 117-130.

2. NIAS, J.B. Dr. John Radcliffe. Oxford, Clarendon Press, 1918.

3. SHAW, D.F. A review of Oxford University science libraries. Oxford. Radcliffe Science Library, 1977.

4. BODLEIAN LIBRARY. Cataloguing rules. New ed. Oxford, 1939.

5. BODLEIAN LIBRARY. Union list of serials in the science area, Oxford. Oxford, 1970.

6. BREMBER, V.L. Personal communication . 1980.

7. GROGAN, D. Practical reference work. London, Bingley, 1979. (Outlines of modern librarianship).

EDUCATION FOR SPECIAL LIBRARIANSHIP IN THE UNITED STATES

Kathleen T. Bivins

Visiting Professor
Linköping University Library, Linköping, Sweden

Abstract

This article discusses the current status of the library and information profession, and outlines the nature of the information problem. It addresses the issue of special librarianship, and defines that area of the field. It continues with the dilemma of education for librarianship, from the United States perspective, and concludes with commentaries on the future.

---

1. Introduction

Education for librarianship is of vital concern to the profession, but unfortunately, it is not an easy matter to devise a program which teaches techniques and theory, and creates an analytical attitude. Accordingly, most programs fall short of these goals, but it is certainly not for lack of trying. These matters are subjects of intense discussions amongst educators, and, to some extent, practitioners.

While it is not the overall purpose of this article to discuss the nature of education for librarianship, it is important to address this issue while attempting some elucidation of what it might mean to educate persons who are interested in pursuing careers in special librarianship in the United States. It should be noted that the views here presented are personal ones, and do not necessarily reflect those of any one library school in the United States, or of the American Library Association, which is responsible for accrediting programs in the United States and Canada. The views, however, do reflect the author's considerable experience in the field, and in-depth knowledge of several U.S. library schools, from both the student and faculty points of view.

1.1 Change

We are all well-aware that the profession is in a state of change, change which may be the most radical we have yet known. With the advent of automation in the library field some twenty or so years ago, many predictions were made about the future for libraries. Talk of the "automated library" was prevalent, and an atomosphere of excitement reigned. Now, in the 1980's, the reality of automation and the knowledge and experience of a decade or more of various forms of automation has led to a degree of

disillusionment and disheartenment. It is of course easy to be the armchair philosopher from hindsight, but the profession has learned hard lessons the hard way. Now we are once again faced with the prospect of newer forms of automation which will surely effect enormous changes in the mode of information storage and retrieval in the near future. One need but mention micro-processors, videodisks, holograph memory, and so on, to indicate the enourmous range of technical possibilities. A more subtle, but infinitely more threatening possibility, is that of the gradual incursion of other fields and professions (or semi-professions) into what was previously exclusively the domain of library/information services. This paper shall address these issues, and can be considered more a plea for adequate educational preparation than a statement of the current situation.

2. Current and future problems

A very useful starting point for further explanation of the status of librarianship is to look at the nature of the information problem. The impetus of the growth of knowledge, especially in the scientific-technological fields, is too well-known to bear yet another repetition. A more enlightening perspective is that outlined in a report by Arthur D. Little, Inc., for the United States National Science Foundation (1). This report is concerned with information users, rather than with types of information and their growth. The three information eras established in the report are presented in Table 1.

Era I	through 1945	discipline-oriented
Era II	mid-1960's -	mission-oriented
Era III	late 1960's -	problem-oriented

Table 1. Information eras in the United States

Era I - discipline-oriented - is the traditional means of dissemination. It retains importance, particularly in university and university-related organizations. Information is disseminated here by books, journals, and through professional meetings. A great deal of work has been done in the area of attempting to discern how such information is disseminated, and the discovery of the "invisible college", the process by which persons within a small research area pass information back and forth, is important.

Era II - mission-oriented - uses information from a variety of related disciplines. Good examples of this approach in the United States include the establishment of the National Aeronautics and Space Agency (NASA) and the Atomic Energy Commission (now the

Department of Energy) which have fairly specific missions. Naturally, a mission-orientation does not exclude the utilization of libraries and other traditional information sources, but it also places heavy emphasis on the availability of information packaged in different forms to serve differing needs. In order to accomplish this latter task, it is necessary to be able to locate this information, and thus one sees the development of abstracting and indexing services. In mission-oriented research, frequently the producers of information are active in different disciplines than are the users of that information, thus making an invisible college process less a factor, and subsequently less effective.

Era III - problem-oriented - is a current concern, and springs from an increasing societal need for dealing with complex and broad-ranging issues, most noted at the present time, in the areas of energy, environment, and health. Rather than accomplish a goal, as in Era II, the motivation here is to focus on problem-solution, and thus to gather all relevant information from wherever produced, in order to reach decisions affecting the problem and leading to its possible solution. Re-packaging is of a higher order than it is in Era II, as the demand is for information in usable form. In addition, many end-users have limited knowledge, experience, time, and/or interest in coping with the vast quantitites of information with which they must deal, and thus we can see the need for experts in information in the form of intermediaries, consultants, information brokers, and other such information channels. Such activities as newsletters, data-base publishing, and online services of many kinds are important for the group dealing with problem-oriented information.

While automation is by no means the solution or the answer to the dilemma of information provision, it is abundantly clear that the current configuration of the majority of libraries does not provide significant help in problem-solution. Most automated aids at the present time occur in the form of membership in a network (i.e., OCLC) and access to one or more of the online reference data base services (i.e., Lockheed). In addition, many libraries have some form of automated circulation control, and sometimes an acquisitions module. Automation has been a patch-work development, and hasn't necessarily contributed to the ability of libraries to deal with the real needs of their users.

Thus, a gap has come into being which does not seem to be alleviated by the process of education for librarianship. On the whole, those who are educated as librarians still conceive of libraries as institution-bound, and are rather more influenced than not by the traditional model. Users, on the other hand, have no such constraints. Should the potential user turn to the library and receive insufficient aid in response to his/her need, then it is possible that this user may well turn to another source in resolving the problem. A more likely situation is that alternative sources will be investigated without initial regard to the library.

Of course at this point it is clear that money is involved. If there is sufficient need, or (more important) it can be demonstrated that the information received has financial value to the user, then it is most logical that users will turn to pay-for-information services, just as he/she would turn to professional services in the law, in medicine, and so on. It is not my intent to state the case either pro or con professionalism and librarianship, nor is it my intent to correlate librarianship with law and other well-established service professions. The illustration is put forth in order to demonstrate that where there is a need that cannot be met by the individual him/herself, it is not unreasonable to expect that a service offering solutions to that need should have a fee attached. The phenomenon of the information broker, indeed the somewhat amorphous information industry itself, is ample evidence of the failure of libraries on the one hand, and of the real information needs on the other. Unless education for librarianship is prepared to make significant changes, it cannot hope to meet the needs of users both now and in the future.

3. Special librarianship

It seems to me to be something of a contradiction to educate persons either for public libraries, or for research libraries, or indeed for special libraries. While it is probable that there are unique occurrences within each type of library, surely it is more reasonable to think in terms of an education which would prepare students for pursuing a career in dealing with problems of retrieval of information for specific utilization (that is, to meet specific needs) rather than to concentrate on the institutions to which these needs may seem to be bound. Accordingly, let us state that education for special librarianship be taken in a broader sense than is usual. Thus, that education is preparation for dealing with problems resulting from lack of information and which can be solved through information.

It might be useful to give some examples of operations which we normally consider to fall within the area of special librarianship, and to attempt to distinguish what makes a library "special" and how does it differ (or not) from other types of libraries. Generally speaking, it can be said that special libraries would include all library/information services within industrial and government organizations. This covers a lot of territory, but clearly excludes public libraries, academic libraries, and school libraries. The Information and Documentation Center of AB Astra in Sweden is a special library, as is that of IBM. A library in the J. Paul Getty Museum of Malibu, California, is a special library. A television studio library, as well as one which houses newspaper clippings, are special. If one continues along these lines, it is easy to reach the point of saying that the music library of the library system of Vassar College in New York State is a special library, and that the local history section of the Los Angeles Public Library is a special library.

Perhaps it is more useful to examine the service aspect of a special library. Almost invariably, a user population can be uniquely identified, as opposed to the more generaiized public of the public library, or the varying student, faculty, and researcher groups of the academic library. Frequently, the user group of the special library in an industrial organization is concerned with carrying out a project which, for example, has as its goal one that stems from its parent company. In other cases, as in the example of the local history department of the Los Angeles Public Library, users of this department are presumably interested in Los Angeles local history and are not pursuing other, perhaps more elusive, goals while in this department.

Let us take then as an operational definition that persons working in special libraries are more directly concerned with needs of their user group(s), most likely in response to the more defined needs of those users. It is also likely that it is somewhat easier to see responses to the endeavors of the librarian in this type of environment, thus at least marginally allowing for more feedback than might be usual in a library situation. It is not my intent to deny that librarians in other than special libraries are not concerned with users' needs, rather that there may be a more direct relationship between the user and the librarian in the special library setting.

It is abundantly clear, however, that not even this more beneficial response environment is sufficient in many cases. The frequent inability of librarians to respond adequately to users' demands and needs can only be considered increasing. This must partly be due to the educational programs of library schools, as well as to the usual circumstance of inadequate funding by the larger organization of which the library is a part. It is quite obvious to state that should the librarian(s) be able to demonstrate more clearly the value of their services, then perhaps the funding situation would be reversed. It is likely that money for information services within various organizations is rather large, but that a small proportion goes directly to the library. Can we educate persons to deal with this situation? Do our present programs provide at least a foundation for so doing? Is this indeed the step we should be contemplating? These answers are not easy, nor is the job of the librarian an easy one. In fact, despite the somewhat negative tone of the preceding section, one of the real concerns of librarianship is that it is indeed one of the more satisfying of professions, particularly in the special library environment.

4. Education dilemma

What is it that we need to do in education for librarianship? And what is it that contributes substantially to the current status of the field? We are now in a situation which shows no signs of alleviation, where libraries on the whole are turning into little more than warehouses. We have created rather good warehousing systems, but, in my opinion, at the expense of the user. Perhaps one could say that the library itself is in conflict, and that that is certainly reflected in curricula in education into the profession.

We seem to be able to manage to teach people how to acquire, collect, and store. We can teach people the rudiments of computing, and expose them to systems analysis, cost accounting, administrative matters, and so on. Of course we mention, and frequently at that, the hapless user, and perhaps discourse on the multitude of "user studies" which have been performed over the years. And naturally we discuss the service orientation of the library. There are numerous courses in the structure and use of the techniques of information retrieval, but are there any courses which attempt to turn the future professionals into analytical, problem-solving persons? And is this indeed the answer? On the whole, we teach students the current status of things, and in the process of elucidating techniques of various kinds, manage to inculcate an appreciation for the complexity of the problems faced in handling information, but also to create an acceptance of the status quo. This is the real danger and a contributing factor to the problems of the field. Maybe the status quo is good, maybe it is fraught with problems. But surely it is important to develop a critical, questioning attitude on the part of those who will continue the profession. It is this attitude which is missing. Some would say that librarianship is filled with so many routines that it is quite easy to slip into habits of day-to-day business, and to ignore other issues. Indeed, this is partly the case, but it is all too infrequent that even those fundamental day-to-day routines are looked at with a discerning eye. And perhaps they are not so very fundamental. We rarely question in this field, and surely that lack has contributed significantly to the rapidly increasing dichotomy between "warehouses" and active information centers.

4.1 Commentaries

There have been any number of articles in recent years which treat of various problems in education for librarianship (2-5 are representative). One of the more interesting ones is that by Evans (6) in which he outlines educational purposes, and discusses library school education from that perspective. In addition, and most importantly, he discusses a program which was devised to educate the "new breed" and its problems and failures. The intent of this program, which was tried at the University of California, Los Angeles, Graduate School of Library and Information Science, was to stop training and instead to provide aids in development of future library/information workers. In looking at the program several years later, Evans asks about its success:

> "... was the change just a lot of word and game playing? Was it an attempt to "dress up" old ideas in the Emperor's new clothes? To the extent that the basic elements (functions) of information transfer (librarianship) and the basic modes of acquiring knowledge have been used for thousands of years, the answer must be "yes". To the extent that the program was attempting to break away from the traditional approach ... the "trading stamp" mentality, the answer must be "no". (6, p.213)

Although of course there are signs here and there of inspired change, and there are examples of librarians who manage to overcome the odds their profession and its education have laid against them, it remains to be seen, in Evans' words, whether we are

still "playing". Those of us who are concerned, and there are many, and those of us who have decided to just get on with the business of providing outstanding information services, all of us remain convinced, despite the heavy tradition behind us, that this field is one of true excitement and reward. We continue to be thrilled by the problems it poses, and by the opportunities it offers, and we remain ever-optimistic that, gradually, our ranks will be swelled and more and more it will be recognized that this field offers one of the true challenges for the future.

References

1. Into the Information Age: A Perspective for Federal Action on Information. Chicago, American Library Association, 1979. (Reprinted, in abbreviated form, from the original)

2. RICHMOND, P.A. Library automation in the United States of America. Program, vol.15 (1981) no. 1, pp. 24-37.

3. LIPETZ, B-A. Educating the information science professional. Bulletin of the American Society for Information Science, vol. 6 (1980) no. 4, pp. 21-22.

4. DAIN, P. The profession and the professors. Library Journal, vol. 105 (1980) no. 15, pp. 1701-1707.

5. WHITE, H.S. Critical mass for library education. American Libraries, 1979: September, pp. 479-481.

6. EVANS, G.E. Time for decision: yesterday, today, and tomorrow: training the new breed librarian. Special Libraries, vol. 70 (1979) nos. 5-6 pp. 209-218.

THE SWEDISH SCHOOL OF LIBRARY AND INFORMATION SCIENCE AND THE EDUCATION OF LIBRARIANS FOR SPECIAL LIBRARIES

Chagan Lalloo
Director of Studies
Swedish School of Library and Information Science, Borås, Sweden

Abstract

The author gives an account of education for librarians at the Swedish School of Library and Information Science and presents both the current and the revised curricula at the School. In the context of the revised curriculum, he also discusses general versus specialised training, programme flexibility and the margins available for the education of librarians for special libraries.

The academic year beginning with the autumn term 1981 marks a turning point for the Swedish School of Library and Information Science (SSLIS). It is from this term onwards that a revised curriculum comes into effect. The revised curriculum is the product of a report submitted in 1978 by a task group appointed by the School. It is the culmination of many years of hard work, of vacillation and uncertainty; of contentions between and among faculty, students, the profession and decision-making bodies. The final result is a compromise and, in the best traditions of compromises it tends to have the weakness that not all who are affected by it, give it their total, unreserved support.

This is not the place to describe the history and background to the new curriculum nor to discuss the politics and problems of designing it. Rather, the purpose of this article is to briefly present the revised curriculum and with that and other relevant factors as points of departure, to discuss the education of professionals for special libraries.

Background

SSLIS came into being as late as 1972. Its establishment was preceded by a government commission report which recommended inter alia the setting up of an independent school entrusted with the responsibility of educating professionals for all types of libraries. Previous to 1972 formal, organised library education for public librarianship was offered at Statens biblioteksskola in Stockholm. Education for professionals needed in other types of libraries was met by internships or in-house training courses and short-course programmes varying in duration and content and arranged for example by the Royal Library, some university libraries and by The Swedish Society for Technical Documentation (TLS). With the coming of SSLIS, Statens biblioteksskola ceased to exist.

Internal training organised by the Royal Library and other university libraries is now at a standstill. TLS, however, continues with its short-course training programmes. In 1972 SSLIS became the first and is currently the only institution in Sweden with the all-embracing purpose of educating librarians employable in all of the varying types of libraries.

From its inception, SSLIS has run a two-year programme of studies on a full-time basis. There are two terms in the academic year (roughly January-May and mid August-December) with an intake at each term. Initially, the number of new entrants to the programme was set at 180 each term but was subsequently reduced to 150 and is now down to 120. Even with the lowest figure, SSLIS has a total fulltime student population of 480! The overriding majority of students, about 75%, are female and the median age has been in the region of 30 years, although a decline is noticeable since the last few years. For admission to the two-year programme, a student is required to have completed high school education and to have studied at university for at least two years. Alternatively, admission may be granted to an applicant who can be classed as a "mature student". The requirement is that the applicant must have obtained the age of 25 years and worked for at least four years of which two having been spent in a library or in a trade of profession with some kinship or bearing on librarianship, for example, journalist, archive or bookstore assistant, author, editor etc. Selection of applicants takes place by means of a special quota system which seeks to ensure that some balance is maintained between those having an academic background and applicants with work-experience. Selection is never done by interview. While the merit in the admission and selection policies can be said to reflect democratic principles, the end result of these same policies in the classroom situation pose particularly difficult problems. The heterogeneity of student backgrounds often demands special teaching strategies and methodologies - not an easily attainable goal when all things are considered.

For the 480 students, SSLIS has a permanent teaching staff of 22 of whom 4 are employed halftime. This gives a student-teacher ratio of 24:1. Swedish laws pertaining to maternity leave and leave for the care of juveniles and for the purpose of studies are quite liberal. At any given time of the academic year between 30 and 50% of the faculty is on partial or total leave for the above or some other reason. In order to compensate for such permanent staff absences, and in order to leave room for external specialists, somewhere between 60-80 outside lecturers (most often practising librarians) are invited to assist in teaching during a typical term.

From among the teaching staff a dean is elected. The dean is the administrative head of the school and devotes 50% of his/her time to duties associated with the deanship. Since the inception of this particular system of rotating deanship in 1977, two faculty members have each served a period of two years. The third dean assumes office as from July 1981.

Supporting the dean is a full-time administrative Director of studies. The School's administration includes also a department for the management of practicums and the organisation of study tours. A section enjoined with the responsibility of organising and running continuing education courses forms part of the school's administrative structure. Among the most important support facilities can be named the library, initially belonging solely and entirely to the school but since 1977 with an obligation to serve the whole of the University College of Borås of which SSLIS is a constituent institution.

The current programme

SSLIS offers only one programme of studies leading to professional qualifications in librarianship. It is the two-year programme mentioned above. Since it admits both students with previous academic qualifications and those with only work-experience to the same programme without discrimination or differentiation, the programme cannot, strictly speaking, be described as a postgraduate programme. By the same token it cannot be characterized as an undergraduate programme. It is, however, the first training for professional service in librarianship, and successful candidates are awarded a University Diploma in Librarianship which is nationally recognised as a professional qualification.

The current two-year programme which is divided into four terms of studies, requires that all students study the same subjects during the first three terms. For the fourth and final term, students have a choice of one of two options: one designed to lead to service in public and school libraries, the other tailored for the needs of academic-research-special libraries. Roughly 25% of the students opt for the second-named alternative. During the two-year period of studies, students spend a total of 10 weeks (first 6 weeks at the end of the first term and then 4 weeks at the beginning of the fourth term) out in libraries. Whilst the first field contact is intended to introduce them to the different types of libraries, the second period aims to provide them with an on-the-job experience with the type of library that coincides with the choice of their option. A compulsory part of the syllabus is a project assignment requiring 4 weeks of full-time work undertaken individually or jointly on any theme having relevance to libraries or information science.

Schematically, the programme and the main subjects of study included in it can be represented as follows:

SUBJECTS COMMON TO ALL STUDENTS			OPTIONS
First term	Second term	Third term	Fourth term
1. Libraries in their cultural and political setting	1. Continuation of subject 1 First term	1. -	OPTION 1 Public and school librarianship
2. Libraries and librarianship: growth, organisation, management, services	2. Continuation of subject 2 First term	2. Continuation of subject 2 First and second terms	. Four weeks of practicum at a library . Subjects 1-4 of the first three terms with emphasis on 2 and 4 . Psychology

First term	Second term	Third term	Fourth term
3. Organisation of knowledge	3. Continuation of subject 3 First term	3. Continuation of subject 3 First and second terms	
4. Reference and bibliography. Adult and childrens litterature	4. Continuation of subject 4 First term	4. Continuation of subject 4 First and second terms	OPTION 2 Academic and special librarianship
5. Six weeks of contact with major types of libraries	5. Library automation and mechanisation. Technical aids	5. Continuation of subject 5 second term 6. Project assignment (four weeks)	. Four weeks of practicum at a library . Subjects 1-5 of the first three terms with emphasis on 2, 3 and 5 . Psychology

The revised curriculum

In 1975 the School, with financial assistance from the National Board of Universities and Colleges, appointed a task group for the purposes of examining the existing curriculum and submitting recommendations for its revision. Among the most important stipulations in the terms of reference by which the task-group's work was to be guided, was that the new curriculum should not extend beyond a two-year programme and that it should not be more expensive. Wittingly or unwittingly they inhibited daring changes; room for manoeuvrebility was limited. The task-group submitted its report in October 1978 and it took a full three years to find a suitable curriculum model within the framework of the recommendations suggested by the group.

Very simply and briefly, the chief proposals put forward by the task-group can be summarised in the following points:

1 the period of common studies should be reduced from three to two terms

2 the practicum period should be extended and should allow for a longer, continuous stay out in a library

3 that a system of options should be introduced during the final term and that these options, where possible, should function as continuing education courses

4 that the curriculum should encourage and introduce much more of project-oriented teaching

5 that the curriculum base should be broadened so that it prepared not just for strictly library work

As can be seen the proposals are neither radical nor revolutionary. They are essentially structural in character but they contain two very important curriculum ideas. The one having to do with that most fundamental of library education problems: general versus specialised library education; the other concerns the curriculum currency aspect, that is, to what extent can the curriculum keep up with and be ahead of the times. To these critical matters I shall return later.

With the recommendations of the task-group as the principal guide, the revised programme has now been decided upon not without, it must be said, a great deal of bureaucratic wind-milling and, from various quarters, a sense of skepticism. The revised programme receives it's official status by means of a document approved by the National Board of Universities and Colleges. The document lays down, among other things, the overall objectives of the programme, the broad structure of the programme and the qualifications required for entry to it.

The objectives and structure of the programme as expressed in the document are as follows:

Overall objective

The programme should prepare for professional work in all types of libraries and associated areas in the field of culture and information.

Specific aims

The aims of the programme are:

to equip students with the necessary professional know-how and knowledge regarding the media, activities and tools of libraries

to give students an in-depth and all-embracing appreciation of the role of libraries in society

to foster in students the ability to view critically the objectives and activities of libraries

to provide students with the foundations necessary so that they may, as professionals, actively participate in the furtherance of librarianship

to impart, from a scientific basis, knowledge of the theories pertinent for libraries for the treatment and communication of information in its widest sense

Content and structure

The programme consists of four terms of compulsory studies. Included in the programme are 3 field-contact weeks and a practicum consisting of 10 weeks.

During the third and fourth terms, the programme offers alternative options with possibilities for in-dept studies.

Students must individually, or cooperatively, fulfil a project assignment.

The above are then the overriding objectives of the programme; they act simultaneously as imperatives and guidelines. As imperatives they stipulate the boundaries of the programme and the overall direction and substance; as guidelines they allow considerable flexibility in matters such as number and comprehensiveness of courses, course structure and content and teaching methodologies. As objectives they are generous and all-embracing and, provided that the means and will are available to fulfil them, they can be made instrumental in producing fine librarians: librarians who have both a theoretical foundation and practical training, a good understanding of the place and role of libraries in society, a critical mind to the problems and prospects surrounding libraries and an attitude conducive for the promotion and development of these service institutions.

However, the jump from objectives to classroom reality is a long one with all manner of difficulties in between. I shall not delve on these except to mention that considerable time and energy has been devoted to discussing the most central issues in the revised programme namely, whether the whole of the two-year period of studies ought to be common for all students with an assortment of options or whether, as the task-group had recommended, students should be streamed into one of two optional study areas from the third term onwards. As the overall curriculum objectives are broad and can be realised in many different ways, various models representing the above two philosophies - singly or in combination - emerged. Students in particular, with support from a section of the faculty and from pockets of the profession, argued for a two-year general programme. Chief among their arguments was that such a programme would prepare for work in all types of libraries, have the effect - gradually albeit - of promoting closer understanding between librarians from different libraries, encourage cooperation, ensure greater job mobility and, with the current economic crisis in mind, lead to a fuller and more rational use of the total resources of libraries. However, the idea that a general training does not adequately meet the requirements of all libraries given the limits of a two-year programme finally prevailed. Important in this contact was also the consideration explicit or otherwise that Sweden, with more than 8 million inhabitants, has only one school of librarianship and that it was ill-advised to bind its only professional programme in the form of a general programme. A technically advanced country like Sweden has special demands on information needs, information management and dissemination not

least because as Björn Tell summarises it "Sweden is dependent upon a steady influx of new ideas. Research results emanating from within the country amount only to a mere percentage of the global output which in turn ... indicates a dependency on scientific and technical information generated abroad ..." [1]

The structure of the revised curriculum with the courses included in it can be represented as follows:

<table>
<tr><th>First and Second term</th><th>Third and Fourth term</th></tr>
<tr><td rowspan="2">. Sources of information (including childrens and adult fictional literature). 16 units

. Libraries and society (including 3 weeks of field contact). 12 units

. Media, media organisation and technical processing. 12 units

Total 40 units

Note: 1 unit = 1 weeks' fulltime studies

1 term = 20 weeks</td><td>OPTION 1: culture-information

. Administration 6 units

. Library activities and library cooperation 12 units

. Library automation and documentation 4 units

. Investigative techniques and project assignments 5 units

. In-dept option 3 units

. Practicum 10 units

Total 40 units</td></tr>
<tr><td>OPTION 2 : information-documentation

. Administration 5 units

. Library activities and library cooperation 7 units

. Library automation and documentation 10 units

. Investigative techniques and project assignments 5 units

. In-dept option 3 units

. Practicum 10 units

Total 40 units</td></tr>
</table>

The first two terms of studies are intended partly as an introduction to librarianship and partly as training for the skills required for the profession. They consist partially, anyhow, of what library educators generally mean by core subjects: reference and bibliography, the place and role of libraries in society, classification, cataloguing and technical processes associated with library work.

From the third term onwards, students have a choice of one of two "specialisation" areas of studies: the one called culture-information the other named information-documentation. Course nomenclature for the two respective study areas, it will be noticed, are indentical. Coverage in terms of units and the contents of the courses, however, are different. The culture-information package emphasises librarianship for public and school libraries whilst information-documentation leans towards academic-research-special libraries and so designed that a student having chosen this option could usefully serve in a large public library.

Flexibility in the programme issues from courses 4 and 5 where a project assignment could be coupled with an in-dept option. This could be done purely at a theoretical level or could be an applied piece of work associated if one wishes directly or indirectly with the practicum which extends for a continuous period of 10 weeks. There can be many variants for courses 4, 5 and 6 whether taken jointly or singly. But changes and adaptations reflecting new ideas and development could easily and constantly be introduced even in courses 1, 2 and 3. Critics have pointed out that the revised curriculum lacks vision and that it does not specifically state how it is going to meet the future, how it intends to prepare librarians to deal with the challenges and demands of libraries of the 80's and 90's. Nobody can adequately, let alone accurately, describe what libraries are going to be like in 10, 20 years' time. Of course we all have notions and can all speculate on this based either on our personal experiences and knowledge or on projection studies and research. But since there is no guarantee in these predictions, there is little sense in including them as integral and fixed elements of a curriculum. However, it is vitally important that these matters are given due attention and possibly the best way of doing it is through the duality: teaching process - field contact. Students should not just be made aware of but actually study recent innovations and ideas, critically examine and evaluate them and be made to appreciate trends in all areas impinging on librarianship. The model practice-research-development-practice with inputs like trends, priorities etc can be more rewarding than a series of dubious statements about the future. In this context a heavy responsibility lies on the teaching staff; there must be a readiness for adapting, renewal and rethinking. Whilst there are built-in flexibility components in the revised programme, we should also remember that no curriculum can or ought to be regarded as definitive. "There is, as Zachert points out, no end point, because the input is changing constantly as the profession changes, as the definition of needs becomes more precise, as the learners, teachers and other

components of the educational process itself change. Also the constraints will change from time to time". [2]

Education of special librarians

A fully adequate and universally accepted definition of a special library, it appears, does not exist. No attempt will be made here at any definition; instead it will suffice for the purposes of this article to mention some of the chief characteristics of a special library.

Collection : a special library restricts its activities to one or several major subject area or areas.

Staff : a special library usually has someone trained to acquire, organise, develop and exploit its own and other resources on behalf of its clientele.

Clientele : special libraries have rather specific user groups often readily identifiable or defineable.

These are, of course, other characteristics as well like service, organisational affiliation and so on but it is with the second of the above that I am primarely concerned here.

In terms of the total programme, the two-year programme at SSLIS can be described as providing specialised library education since the last two terms are devoted to study by particular types of libraries. In the case of the Information-Documentation option, even if this is not spelled out specifically, it is the academic-research-special libraries constellation that is the main target of the syllabus. However, if the programme is viewed within the context of the two-term option per se, it is no longer valid to regard it as leading to specialised education. Paradoxically then the programme is both "general" and "specialised".

It is by choosing the Information-Documentation option that students can receive training that can make them suitable for employment in special libraries. A student who chooses his practicum at a special library and directs his in-depth option jointly with his project assignment to such a library will have succeeded in concentrating nearly half of his second year studying special librarianship. To this can be added relevant elements from the first three courses. This is a possibility that never existed in the old programme. While this is an encouraging feature of the revised curriculum, it needs also to be pointed out that there is no specific provision, by way of electives or the like, that can a priori ensure the turning out of specialists like law librarians or map librarians or medical librarians. In the absence of specialised courses, the expectation is that students, after having completed their studies will "grow into" the special library they

land up in, adapt themselves and apply their knowledge to the particularities and the special demands made of it. This raises the question of student background and experience. Many special libraries prefer, if not demand, subject speciality. Students will in future, as now, themselves decide which of the two area options they wish to choose without any pre-screening. This implies no prior control of suitability for special librarianship in terms of for example subject knowledge. The instruments for such control rest not on counselling or screening but in the admission requirements to the programme. These are in urgent need of revision.

Conclusion - personal reflections

With only one library school in the country and with only one programme leading to professional qualifications, and even that so rigidly tied to a two-year period, SSLIS has challenging difficulties in constructing and designing courses that satisfactorily meet the needs of special libraries. The problem is that there are too many kinds of special libraries. A first necessary step in tackling this problem is therefore a nation-wide manpower study (the last such was carried out 15 years ago in conjunction with the Commission report that led to the establishment of SSLIS) combined with detailed job descriptions and analyses. This would then provide the basis for SSLIS and the library community to resolve whether other programmes are needed or not. If the response is affirmative, the next step ought to be to determine what programmes are necessary and how they should be structured in terms of duration, content, spacing, intake and admission. In times of rapid technological changes and increasing specialisation, we need also to consider whether the "new breed" librarian, at least when it comes to the conglomorate academic-research-special libraries, should be a generalist or specialist. We need also to discuss the place of continuing education in providing post library school specialisation. The Delegation for Scientific and Technical Information Provision ought to have a special interest in these matters not least because education is one of their areas of responsibility. [3]

References

1. TELL, B. Scandinavia and European co-operation in the field of I and D. Tidskrift för dokumentation, vol. 37 (1981) no. 1.

2. ZACHERT, M.J.K. Preparation for special librarianship, in Education for librarianship : The design of the curriculum of library schools, Herbert Goldhor, editor. University of Illinois, 1971.

3. see reference 1 above for a description of the Delegation for Scientific and Technical Information Provision.

CONTINUING EDUCATION IN THE 80 s: THOUGHTS OF A SERVICE LIBRARIAN

Patricia Gebhard

Coordinator of Library Instruction, Reference Department,
University of California Library, Santa Barbara, California

Abstract

New aspects of librarianship will make use of libraries by patrons more difficult in the future. However, the more crucial problem for service librarians is keeping up with these aspects in order to instruct, inform and assist the patron. Sharing is suggested as a means for individual service librarians to keep up. Sharing, through publications, conferences and workshops, Audio-visual programs, and inhouse training sessions.

Service librarians in the eighties are going to have to be like Alice and the Red Queen in Through the Looking Glass. They are going to have to run faster and faster to stay in the same place - to maintain the same level of service that they are providing now, recognizing that, in addition, most librarians wish they could provide better service now and in the future.

My thoughts for this paper began with library instruction. How are we, as librarians, going to inform the patron about the new aspects of librarianship: changes in cataloging rules (AACR-2), in filing rules, in use of new forms of the catalog (film, fiche, on-line), the proliferation of new reference sources, on-line searching in bibliographic data bases, introduction of data bases as sources of information, and other innovations still to come.

Patrons in libraries need, as they always have needed, to be able to find the materials and information which they desire. Even now they find this location process difficult and complex. The changes and innovations have and will continue to increase the complexity of finding information. For example, a student needs current information on computers. Before he can have an article in his hand, he has to identify a source such as Computer and Control; determine a subject heading, use the subject index to find the volume and item number of an article; find the bibliographic data on the article; decide whether he wants to read it; identify the call number of the journal; locate the call number in the library; find the volume on the shelf and the article in the volume. Our colleagues tell us that in 45 % of the cases the patron does not find the article. [1] In the case of failure the patron needs to know about exception procedures, to be able to determine where he made an error in his search which this same study says the patron wont be able to do, or

to be willing to ask for help. The service librarian's task is to assist the patron in finding his article. In any university or college, the librarians assist the patron in a multiplicity of ways - by direct personal assistance, signs, posters, explanatory brochures, audio-visual devices, printed instructions in sources, lectures, classes, etc. The librarian would like to simplify the search for the patron, but there is no real way without doing the search with or for the patron and even then steps can not be eliminated.

The new approaches to service may to some extent simplify the patron's search. For example, when the librarian does on-line searching for the patron or when the patron can search titles by key words on-line, but in general with the growing size and complexity of information itself, searching for information will continue to be complex.

For these new aspects the service librarians will continue to use the means they have previously used to assist the patron. Instance the instructional devices developed by the librarians at the University of Toronto to assist their patrons in the use of their micro catalogs.[2] These included two different brochures, a poster holding the brochures, flip charts, brief operating instructions, a self-operated slide-tape presentation, a self-operated audio tape to be used with the flip charts, a programmed learning exercise, a video tape, seminars and personal assistance. Librarians will probably develop new means as well to instruct or inform the patron, such as the friendly patron interface system being developed by the University of California system wide office for assisting the patron on-line in the on-line catalog or what the Task force on public relations, user information and staff orientation for the new catalogs at University of California, Berkeley, may develop.

It should be fairly obvious from what I have said that searching will continue to be a problem for the patron. But for service librarians, the problem is much more severe. All of the means used by the patron will have to be developed by librarians. In addition, it is expected that the patron will need more direct personal assistance in the future. Thus, librarians will have to obtain the knowledge and expertise of the new aspects of librarianship so that service to the patron can at least be maintained at the present level if not actually improved. To obtain the expertise, to keep up to date, the service librarian will have to, like Alice, run faster and faster.

As one of my colleagues pointed out, conscientious service librarians have always had to run faster and faster to stay in the same place. If this is true, it is even more pertinent to determine how we are going to increase our speed.

Traditionally, librarians being great readers have always kept up to date by reading the literature. As a reference librarian, I have the AACR-2 code, the summer issues for 1978 and 1979 of Library Resources and Technical Services, a book entitled The Making of a

Code, and until recently issues of the LC Catalog Information Bulletin, hoping the information I need to know about AACR-2 will magically slip into my brain. I subscribe to American Libraries, College and Research Libraries, College and Research Libraries News, RQ and Journal of Academic Librarianship, and my name appears on all of the advertisers' lists.

During a stay at home I carefully read all of the recent issues of these journals, marking the books and articles I wished to pursue further. They remain in a pile on my desk four months later along with the new ones that I have since received. Should I be blamed for finding Gothics more amenable for bathtub reading than RQ?

When the opportunity presented itself, I have run searches on ERIC for my current job related enthusiasms. Any of you who have had searches run know that the fun is in being on the machine; the nittygritty is searching f r the items in the library, requesting them on interlibrary loan and reading them meaningfully.

I should include in material to be read, instructional materials prepared especially to assist the user. Most bibliographic data base services provide manuals which can and are being used and read by on-line searchers. In addition to full explanatory manuals, brief quick reference sheets have been prepared for on-line searching. Our library has one for quick reference at the OCLC terminal for the use of service personnel. Since this is one way we inform our patrons (leaflets and flip cards) librarians will read these instructional materials for their own information as well as to discover whether they are sufficient for the instruction of the patron. At the University of Toronto written materials (i.e. flip charts and brochures) were one of the primary ways by which their patrons learned to use the micro catalogs.[3]

I am still enthusiastic about reading as a means of keeping up, even though I recognize the problems.

Courses at library schools could probably be a good solution for keeping up, but in addition to the time and expense for us who work in the boonies this is not a viable solution. Being slightly remote from a large center of population makes going to conferences or one or two day workshops equally difficult, though not impossible. All of the on-line searchers at my campus have gone to innumerable workshops. They tell me that it is probably the best way in which they have learned searching techniques and kept up to date on new search capabilities. I have been to a number of workshops in my area of interest, library instruction. As might be expected they vary in quality and in the amount of information which is applicable to on-job duties. At conferences and workshops there is, of course, the added learning which takes place through discussion with colleagues working on the same problems.

In times of cutbacks in funding, it could be more efficient to bring workshops to the libraries in remoter areas. One way of bringing workshops to a library is through audio-visual programs - slide-tape, film stip and tape or television cassettes. I thought this was a poor way until I saw a really good production. Audio-visual programs have been used for library instruction for at least the last fifteen years. I did not attend the recent conference in New York on audio-visual packages, but the programs I have seen at various workshops have not been outstanding. They have been costly to produce and awkward to use in the library because of machinery involved. As a result of that conference, a group will be working on the problems of the availability of good library instruction audio-visual programs. It would appear on the basis of the past year that more programs will be prepared for the instruction of librarians as well.

Perhaps the most viable method for librarians to keep up to date in all they need to be knowledgeable about is by sharing, both in the macrocosm and in the microcosm.

For the library profession, the librarians who have developed an expertise will share their knowledge with other professional librarians or in a library individual librarians will share with their colleagues. Library literature is in actuality sharing as are workshops and conferences such as this one. The experts or experienced sharing their knowledge and expertise with the neophytes. At a recent in-house workshop on library research, we were told loud and clear it was our sacred duty to publish the results of our research in ERIC.

Now and in the eighties this sharing is based on specialization. After efforts toward acquiring a workable knowledge of AACR-2, I have concluded it will be more efficient for the catalogers to inform service librarians of what they need to know in order to help the patron. It has been proved helpful at my library for one reference librarian to identify important reference sources being added to the collection, list them and evaluate them for all the librarians. Certainly it is necessary for on-line searchers to specialize - first perhaps just as to science or social science, but then further as a Medline specialist, a Chemical Abstracts specialist, or Psychological Abstracts specialist. One or two librarians can become experts in instruction. The specialists can be subject selectors for the collection who really know the materials coming out in subject areas. Referring the patron to the specialist is awkward at times, but can provide the best service to the patron.

In-house training sessions can be a valuable way of sharing. In cases in which the library has supported the development of the expertise, the librarian has an obligation to share with colleagues through written reports, formal presentations or informal discussions. Whoever has developed the expertise presents the information to his colleagues. Scheduling in-house training for service librarians can be difficult to manage, but it is not impossible.

Considering the problems that service librarians have always had keeping up, maybe it is true that we have always been running faster and faster to stay in the same place. If as professionals, librarians work together, running hand-in-hand, perhaps each service librarian will not have to run as fast on his own. In fact, in times of financial resource shortages sharing is the only solution which makes sense.

Sharing can take place in conferences, in workshops such as the one hour stand of the California Clearinghouse on Library Instruction, through publications such as College and Research Libraries or Journal of Academic Librarianship, or through in-house training sessions, but perhaps of more importance through informal communication between colleagues on one campus or different campuses.

I would like to end this paper on a positive note. I believe that service librarians in the eighties will meet the challenge of being intermediaries between information and the patron as they have met the challenge in the past.

References

1. MURFIN, Marjorie E. "The myth of Accessibility: Frustration and Failure in Retrieving Periodicals." Journal of Academic Librarianship 6:16-19 (Mar. 1980)

2. MURRAY, Carolyn, "Components of Microcatalogue Instruction." Annual Report, 1976-77 of the Coordinator of Library Instruction. Toronto, University of Toronto, 1977. pp. 1-3.

3. Ibid.

INFORMATION TRANSFER: A CONCEPTUAL MODEL FOR LIBRARIANSHIP, INFORMATION SCIENCE AND INFORMATION MANAGEMENT WITH IMPLICATIONS FOR LIBRARY EDUCATION

Roger C. Greer

Dean, School of Library and Information Science,
University of Southern California, Los Angeles, U.S.A.

Abstract

Traditionally there are five basic functions which the library and librarianship perform for society - archival, cultural, educational, recreational and informational. The author states that library education has been, and still is, mainly directed towards the archival function. Even the primary forms of the informational system, has been based on the reactive use of stored material. The author maintains that the system should be assertive and dynamic. A theoretical model for information transfer is described. The roles of librarians, information scientists and information managers are analyzed with relationship to this model and in context to the five functions described above. Implications for curriculum design are discussed. Recommendations for programmes of study based on a common core, but with distinct areas of specialization for students training for the three professional fields, are presented.

In 1933 Pierce Butler observed that unlike his colleagues in other fields of social activity the librarian is strangely uninterested in the theoretical aspects of his profession. He seems to possess a unique immunity to that curiosity which elsewhere drives modern man to attempt, somehow, an orientation of his particular labors with the main stream of human life. The librarian apparently stands alone in the simplicity of his pragmatism: a rationalization of each immediate technical process by itself seems to satisfy his intellectual interest. [1]

Butler went on to describe a future that would be significantly changed from the rather dismal picture described above. But, unfortunately, his words of almost fifty years ago still all too accurately characterize librarianship and information science as practiced today.

This paper is an attempt to articulate a conceptual model of librarianship or library science, information science and information management which will "orient" these "labors with mainstream of human life."

Traditionally library school students have been taught that there are five basic functions which the library and librarianship perform for society. These functions, which evolved historically, are: archival, cultural, educational, recreational and informational. The first

function is the oldest in time and most important in order of priority. Without the archival records as a data base, the other functions are without meaning and substance. Consequently, the archival function has been and must remain a primary responsibility of librarianship and information science. However, unlike the other four functions, the archival function is book or record based. Its primary concern is the preservation of the records of the society. Its goal is achieved when all possible materials are identified, acquired, organized, stored and made accessible. It does not intrude in the day to day traffic of society, but rather yesterday's human interaction.

Although society requires this service to permit recourse to the record in order to build on knowledge developed yesterday, the archival function itself does not directly contribute to new knowledge. The condition of access to the organized record is usually constrained by the collector's characteristics rather than the needs of the people seeking access. Preservation of the record is primary, conditions of access secondary. Thus, the system designed for this function is oriented to the record rather than the potential user.

Unfortunately, library education, while giving lip-service to the other functions, has remained preoccupied with the archival activities. The bulk of the courses provided in the typical curriculum for librarians or information scientists are oriented toward the records, methods or organization, storage and retrieval. Minimal attention is given to management and the purposes for which people need access to the records.

Thus, though Pierce Butler insisted in the 30's that library science was a social science because of its focus on people and their uses of information, that aspect of the professional study has remained relatively unexplored. Moreover, the overall development of a body of theory has been largely concentrated in the areas of organizing, storing and retrieving the records or information about the records.

Because of this consuming concern for the processes associated with the archival function, there has been little time or effort devoted to the mastery of the theory and research methods of other disciplines in the social and behaviorial sciences. Without this knowledge, the practitioner is sorely prepared to develop a program of service designed to achieve systematically any of the other four functions of the library.

Once the librarian seeks a goal or function other than identifying, collecting, organizing, storing and providing access to societal records, the focus must be on people. This may mean people in a general community, or a school community. The constraints of that community from economic to social, along with their immediate and long term goals become of primary concern to the librarian. This concern, plus the objective of serving cultural, educational, recreational and informational functions radically alter the librarian's role from passive to assertive, from a bystander waiting to collect yesterday's records to a dynamic participant influencing the course and direction of events.

For example, the cultural function of the library as reflected in the provision of a collection of the "best" of the records of society is not achieved with the mere acquisition of a "well-rounded" collection of materials. The collection must be developed in response to a known desire to have this material to achieve specific goals at specific times and places.

Similarly, the educational function cannot be satisfied without a clear understanding of the learning process and the environments and sequences in which this process is realized. The intrusion of relevant materials into this process must be a consequence of careful study, system design and function-oriented management. The mere selection, organization, storage and availability of material will not achieve the objectives of the educational function of the library.

The selecting, collecting, organizing, storing and providing access to material designed to entertain is still primarily archival in nature. The development of the means to deliver this material at the times, places and circumstances appropriate to local recreational activity is a fundamental component of the recreational function of the library. Thus, assertive exploitation of the delivery system based on behavioral patterns of the client population is fundamental.

The information function of the library has its origins in the development of reference services in the latter part of the 19th century. Information centers, special libraries, information and referral services and computer-based bibliographic services are components of this function. In most instances, the service is reactive in nature functioning only at the initiative of a client. These systems are designed around the existence of the information initially and may be subsequently modified by the demands made upon them. Rarely is the system designed from a careful analysis of the environment or needs of a client population. Consequently, the primary focus of these systems retains an archival, passive perspective rather than the assertive and dynamic. The promise of developing technology could be a greater movement toward the personalized and assertive service. A movement which the profession should lead and design rather than follow and accommodate.

The current preoccupation with networking and ever larger combinations of materials being made passively accessible to increasing proportions of the population are still essentially archival. Having access to a record's location does not, in itself, mean that larger proportions of the population will use more of society's records.

The purpose of this paper is to propose a theoretical model of information transfer. The respective roles of librarians, information scientists and information managers are identified within this model in the context of the five functions discussed above.

Implications for curriculum design are discussed. Recommendations for programs of study based on a common core with distinct areas of specialization for the preparation of entering professionals in the three fields are presented.

A basic and universally accepted tenet of this profession is the dictum to assess needs and design an information system and/or library collection to meet these needs. The literature and research on needs assessment consistently focuses on the individual as the focus of study. This appears to be reasonable since libraries and information centers orient the delivery of service to the individual.

The general research approach to needs assessment has utilized one or more variations of the techniques of survey research. Most often, a sample is drawn and a pre-designed instrument is administered either by the subject alone, by personal interview or by telephone interview. The possibilities for bias in selecting a sample and designing a data collection instrument which is distortion-free are considerable. These limitations are compounded by the need to accommodate individual expression while seeking quantifiable data for meaningful statistical analysis. Consequently, meaningful conclusions generalizable to a total client population are rarely achieved. Thus, most attempts at needs assessment become descriptions of the demographic characteristics of "typical" users of a particular system - a process which has reached the point of absurdity in its redundancy.

The most unfortunate bias in this process occurs at the point of origin of this research - the library. Libraries generally resemble each other in external form such as structure, organization and mode of operation. On the other hand, individual variables such as collections, staff, policies and services vary considerably within the family of generic libraries. Consequently, research that presumes the generic library to be a relatively constant variable while measuring attitudes and behaviours of individuals in relation to this constant rarely yields meaningful data. Furthermore, the focus on the individual in all dimensions, perspectives and societal roles compounds the problems of meaningful bias-free conclusions. Therefore, a narrowing of research focus to only one perspective, role or activity is suggested as a more appropriate approach to needs assessment.

This approach is defined here in the context of the "information transfer" process. While the main focus continues to be the individual, it is the individual from a single perspective in the context of his environment. This environment context is examined by means of the function, or, broadly speaking, as assigned role of the individual. An environment or subsociety under consideration will have a structure that involves specific patterns of language, a special vocabulary, significant people, uniquely important dates, locations, objectives and annual cycles. These characteristics are oriented to the particular purpose of this subsociety in the context of civilization.

Within the unique structure of this subsociety individuals can be categorized as groups of people functioning in specific roles. For example, the subsociety or discipline of chemistry contains a long array of categories of individuals neatly labeled by role or activity. Beginning with the child playing with a home chemistry set; the student in the classroom; the graduate student from beginner to Ph.D. candidate; faculty members, both junior and senior; at the same time they are researchers. Other groups are bench chemists, manufacturers, vendors, administrators, container designers, transporters, and government agencies for research, regulation, and dissemination of information. In addition, there is the private sector in publishing and professional associations. The list goes on and on. Although each of the categories mentioned contains an array of subcategories, it is possible for a person of average experience to conceptualize the various activities of these people as they function within the discipline of chemistry.

Within the normal daily dynamics of this discipline there is a constant interaction of individuals and categories or groups of individuals performing their various functions. This interaction may be lateral within a particular group (e.g. student to student) or vertical such as individuals in different functions (e.g. teacher to student). In every instance this interaction involves the exchange of information, either received, sent, or both. This process is defined here as information transfer.

The information exchanged, includes phrases, terms and concepts peculiar to this discipline. This special language is the by-product of a dynamic process of discovery, transmission and leads to the eventual codification of information. Consequently, facts, accepted truths, formulae, methodologies, concepts, descriptions of events, etc. have gradually and systematically been collected, cumulated, organized, stored and disseminated. Over time this discipline has amassed a considerable body of literature which shall be referred to as its "data base". This data base is dynamic in that data are constantly being added, repackaged, and occasionally deleted or at least relegated to storage. The processes of identifying, collecting, organizing and storing of these packages of data are essentially the archival function of librarianship and information science.

The data base endures from generation to generation while individuals entering the field ascend the ladder of roles and functions and then split. During their careers they draw from the data base, add to it, possibly reshape it or delete it, but as they pass through the doors of fame or obscurity, a succession of younger generations are moving forward to take their places.

As the data base grows, an individual can no longer retain all of the information that is likely to be needed during the process of fulfilling a function on a day to day basis. Consequently, participants in these functions must have recourse to the data base. The

individual must have access to the data base at particular times, specific formats, and appropriate levels of sophistication. This should be possible with the least time and effort expended to permit uninterrupted continuance of that function or interaction of the moment. Uninterrupted means the flow of concentration and momentum within the system is maintained. It also means that the individual must be able to use the language and logic natural to the discipline rather than one imposed on the information by the archivist.

Libraries have always served individuals at the point where the individual discovers a need to be satisfied by recourse to the data base. The process of satisfying a need initiated externally and brought to the library for solution is at best a form of reactive service. The usual pattern of "good" service includes a negotiation process wherein the librarian ascertains the context in which the need arose in order to assist the inquirer to acquire the "right" answer. That is, information that is verified, at the proper level of sophistication, acceptable format, appropriately current and a specific or comprehensive presentation of the needed data. When completed, we presume a satisfied client. There is a confident justification of the costs of collections, space, staff and equipment allocated to this service. This process is essentially an extension of the archival function of the library. It is a reactive response and retrieval rather than assertive dissemination of information. To be other than archival, the librarian must begin to examine the origins of the inquiries brought to the library. Thus, in addition to the traditional compilation of all questions asked as well as the sources used to provide the solutions, a record of the contexts from which the information need arose should be added. Periodically a systematic analysis of these contexts along with the information need reflected in the inquiry, the source for solution, plus other variables such as time of day, level, format, etc., will yield data about the environment. This, combined with a parallel and systematic analysis of the environment and patterns of information transfer exclusive of the library, will yield a perspective of the type of information delivery system suitable to the environment.

Such study will enable the library to extend service beyond the level of passive archival oriented access. It will provide the data necessary to develop assertive services oriented to educational, cultural, recreational and information functions. These services can be designed in whatever combination and measure is consistent with the needs of the environment within the constraints of available funding, staff, and facilities.

The librarian serving in this environment must be both a leader and manager. It is essential that this person be able to analyze the information transfer process in this environment, design a compatible system and subsequently manage this system.

Inherent in the model of information transfer is the assumption that most housekeeping tasks in the library can be accomplished by staff without professional library degrees. Reference librarians or catalogers may require graduate degrees from other disciplines for in-depth subject knowledge. However, simple communication and retrieval skills necessary for passive archival functions can be learned through "in service" training programs taught by librarians. Thus, the librarian-manager must also be an educator in the fullest sense. He or she must not only educate the client population on the nature of the information systems design and the way it can feed information to them, but also, must be competent enough in the archival processes to be able to conduct in-service training for the staff and evaluate performance.

One of the librarian's primary responsibilities is to analyze the environment served and understand the information transfer process through careful examination of the functions of individuals within that environment. It follows therefore, that the librarian's role is unique. No other person is likely to interact with all of the other categories of people in this environment in this particular way. Thus, the librarian must necessarily acquire a unique perspective of the total environment and the relative place of the specific functions. This unique perspective may be invaluable in a variety of decision-making contexts associated with the environment. Hence, the librarian should be drawn to an unprecedented leadership role. Training for this leadership role must be accommodated within the educational program for librarianship.

The information scientist does not compete with librarians for the managerial role of the library. In this conceptual model, the information scientist's function focuses almost exclusively on the design of internal systems of organizing and retrieving knowledge. For example, the catalogers of the typical library fulfill the role of information scientist, as do the designers of specific bibliographic data bases such as Chemical Abstracts or The National Union Catalogue. In addition to the design of data bases, the information scientist must be thoroughly conversant with technological developments for storage, retrieval and the linkage of various data bases regionally and nationally. Furthermore, the information scientists manage the continuous growth and change of a database to reflect the dynamics of the discipline being served.

As with the librarian, the information scientist must begin by analyzing the environment from which the data base is developed. Furthermore, the information scientist must design the system to serve the specific needs of particular categories of users engaged in fulfilling their functions within the environment. In addition, the information scientist must design this system to satisfy various types of information needs in relation to the five functions from informational to educational or merely archival. Consequently, a thorough analysis of the environment is a fundamental precursor to the design of a data base created for the purpose of enhancing the dynamics of the information transfer process.

Unlike the librarian, the information scientist does not need depth of training in managerial skills beyond the elements of needs analysis, planning design and evaluation. Where the librarian must train and supervise non-professional staff, the information scientist must have a depth of competency in the organization of knowledge, information transfer processes, thesaurus building, indexing and abstracting, as well as the constantly developing technologies of data storage, retrieval, and networking.

A third professional who overlaps both the librarian and the information scientist and concurrently encompasses areas unrelated to either of the above is the information manager.

Both the librarian and information scientist are focused primarily on developing and maintaining information systems that deal with prepackaged data. That is, data that have been generated within the dynamics of the information transfer process. These data are then distilled or culled to remove the ephemeral residue so the substantive can be packaged in a report, article, monograph or other format. These packages are assembled by the information scientist at the micro level and by the librarian at the macro level. In other words, the information scientist assembles a collection of packages in a specific generic data base while the librarian assembles the various data bases in an organizational structure.

The information manager, on the other hand, is more intimately associated with the information transfer process itself. This close association with the information transfer process manifests itself in the design and management of a system that incorporates the records of daily communication and interaction. The system may be compared to the other systems through the analogy of computer families. These range from the huge storage and manipulative functions of the large computer to the mini and micro-computers, as well as families of calculators. The difference lies in the relative abilities of each system. Within computer technology, the largest computer can manipulate every digit in its storage chamber with all of the capabilities of the calculator and micro-computer. Conversely, large information systems such as libraries cannot accommodate the retrieval function of each word, sentence, paragraph, page, or chapter in a monograph.

The information scientist is still dealing primarily with bibliographic data bases. The information manager, on the other hand, must be able to identify, organize, store, retrieve and disseminate words, paragraphs and single sheets of paper if they represent discrete records of a link in the information transfer process. In this respect, with the exception of the dissemination function, the information manager applies the tools of the archivist or records manager.

Consequently, the information manager shares the common need to be able to study the processes of information transfer in a particular environment, organization or discipline in order to design a system to serve the dynamics of that environment. In addition, a knowledge of the technology employed in the storage and retrieval of data, as well as the technologies associated with reprography is essential. Moreover, a thorough understanding of communication theory and practice, as well as message design, etc., is a necessary component in the educational preparation of the information manager. Another role which may be proper for the information manager is that of a data "gate keeper". The process of sifting the ephemeral from the substantive in terms of information or data to be discarded and that to be retained for the permanent data base may be another function of the information manager as this field developed and becomes institutionalized in corporate and organizational structures.

In summary, this model attempts to identify the respective roles of the librarian, information scientist and information manager within the context of information transfer. It is evident that each of these professionals has a distinct role in serving the dynamics of the information transfer process in any specific environment.

These three professional roles share a common base with respect to the knowledge and competencies required to properly complete their functions, e.g. need assessment, systems design and evaluation. At the operational level the librarian must specialize in management functions; the information scientist in data organization, storage and retrieval techniques and technologies; the information manager in communication theory and archival competencies.

These information transfer professionals must develop strong research components in order to relate the five functions (at least initially) to the way people use information. A body of theory about the structure and processes of information transfer in various environmental or organization contexts must be developed and codified. This theory will prescribe the nature and configuration of a system appropriate for various generalized environments and conditions.

Implications for library education

A program of education for the information professionals must incorporate three significant components inherent in a career-long learning process: 1. entering level preparation; 2. in-service training; and 3. post-graduate continuing education. Since the preparation of the entering professional has been appropriately designated at the graduate education level, there is a presumption of breadth in the prerequisite undergraduate program, plus some in-depth experience in a major field of concentration. While the graduate level presumes continued specificity of direction in the new area of concentration, this specificity is oriented to the theoretical, conceptual and analytical

aspects of the field. To achieve this focus effectively in the information profession, a student must have a prerequisite knowledge of the terminology, facts, techniques and specific procedures associated with the operation of a library or information system.

This knowledge need not be at the "expert" level. Rather, it is an introductory orientation necessary for a conceptual understanding of the whole as well as the relationships of the specific parts of the information transfer professions. Thus, the second component of education is "in-service" to be achieved in the classroom or laboratory for the purposes of preparing for graduate study. And second, "on-the-job" experience which deals with the specifics of individual systems and their environment vagaries.

The third component in the educational continuum is associated with continuing education. These experiences, whether formal group or individual programs, are intended to up-date or provide in-depth knowledge at either a procedural or conceptual level of understanding. The content of continuing education may and should range from new ideas and research data to the developments of policies and broad trends suggesting new directions of professional thought and innovation.

An agency such as a library school which has education as one of its primary responsibilities (the other is research) must plan the extent of its commitments in each of the three components identified above. Since graduate study requires a prerequisite "shop-level" knowledge, appropriate surrogate laboratory experiences can be developed to provide this how-to orientation. The graduate program will encompass most of the substance necessary to a continuing education program for any category or practitioner. Therefore, the faculty of a particular school should be deployed in a manner capable of providing "in-service" instruction either in the school laboratories or "on-site" in a library; of providing the graduate level instruction appropriate to the university setting; and continuing education experiences wherever possible. In this way, the faculty will provide maximum service to the profession while experiencing a constant interaction between the theoretical and the practical aspects of the field.

A library school must be the incubator of the information transfer professions. It now serves as the "gatekeeper" for the library profession, and can fulfill a similar role for information science and information management. The "bread-and-butter" of the library school is and will remain, the graduate masters degree for the beginning practitioner.

The current move toward two-year master degree programs may be a reflection of the desire to satisfy both in-service and graduate level educational requirements. While a two-year program may be necessary, it appears premature to design such a program until the ideal one-year program has been designed, tested, modified and accepted. At that

time, the conclusion may well be there is a need to add more course work and time to the preparation of the beginning practioner. However, this latter must await the former.

The purpose of this paper is to outline a one-year curriculum with a common core and three areas of specialization for the preparation of librarians, information scientists and information managers. This program consists of thirty-six graduate and six undergraduate prerequisite course credits.

The undergraduate prerequisite work is designed to provide an initial level of competence in those "how to" aspects of these fields which are normally part of an "in-service" training program. It is assumed that the students will complete this level of training as part of the initial orientation to graduate study. Therefore, enough experience is provided at the "what" and "how-to" level to enable the student to conceptualize and understand the theoretical.

This prerequisite training, although necessarily incomplete, can be enhanced by use of laboratories designed as surrogates for the "real world". The training, consisting of a knowledge of resource tools, procedures and operations for accomplishing specific tasks can and should be packaged in self-paced learning modules administered with the aid of a teaching and laboratory assistant.

It is proposed, then, that three laboratories be developed as surrogates for an active operational information transfer environment. These laboratories are: 1. a technology and cataloging laboratory the student learns the technique involved in the technical processing of records utilizing necessary tools, resources and technologies. In addition, the student develops a competence in the use of various technologies employed in other operations of a library and information center, with particular hands-on experience at a computer terminal. 2. Media laboratory - the student should acquire a knowledge of the techniques and procedures involved in the preparation of various types of media software. Included would be experience in operating the range of media equipment from film and slide projectors to porto-pak video equipment. 3. The reference communication laboratory - the student must acquire a working knowledge of the general reference tools basic to any medium sized reference collection of materials. In addition, experience in dyadic, triadic and other communication behaviors at the observational level can be provided in the laboratory.

The scope of these laboratory experiences would not extend beyond the "how-to-level" of content. In addition, by placing these laboratory experiences at the undergraduate level, students with previous on-the-job or course experiences will be able to "test-out" these requirements. The entering student with no previous experience will be expected to begin working in all three laboratories during the first semester of study, but may complete them at any time during the program.

The graduate program begins with a common core of courses appropriate for the librarian, information scientist and information manager. The objective of this core is to respond to Butler's challenge "...to attempt, somehow, an orientation of his particular labors with the main stream of human life." The focus is on the philosophical and theoretical with respect to man, society, social organization and the information transfer process in human interaction. Broadly speaking, these courses deal with:

1. the philosophical concepts that represent the cohesive core of the various civilizations or societies in the world today
2. theoretical considerations of the individual
3. theories of information, information transfer and the diffusion of knowledge
4. general management theory
5. a "tools" course in research methods

A common knowledge of these four areas plus the tools of analysis is essential for all three areas of study.

These five core courses are conceived of as representing three credits each for a total of (15) fifteen required of all students. They are projected at the 500 level for the entering graduate student and should be taken simultaneously or sequentially. All five courses should be completed or nearly so, before further graduate study is undertaken.

The second tier of courses moves toward a greater level of specificity and represent twelve (12) credits also at the 500 level of study. These courses would focus on the following areas of study:

1. the social functions of libraries and information systems
2. the theoretical elements of the organization of knowledge
3. analysis of communities
4. systems analysis and design

Depending upon a student's intended area of specialization, the advisor would recommend a minimum of three of these four courses. As a result of this second level of courses, a student should have acquired a knowledge of the methodologies to employ for analysis of environments to be served by specific information systems or libraries. This will be complemented by a knowledge of systems and introduce modifications as necessary. Essential to the analysis and design of a system is an understanding of the particular function (s) this system is intended to support. Thus, the first course is a survey of the environments in which each of the five functions is dominant and the characteristics of the systems necessary to achieve the objective of each of these functions. The second

course is intended to provide a knowledge of the theoretical considerations inherent in the process of organizing and storing knowledge or information in various formats and environmental constraints. And the third and fourth courses and methodological in nature.

The third level of specification moves to the 600 and seminar level of instruction. This level contains approximately 25 separate courses of variable credit. Not all, but approximately two-thirds of these courses will be offered each semester in addition to the nine courses of the first two 500 level tiers. These courses will focus on the functions, environments, people, processes and tools. In many instances they will approach the content from a different perspective. For example, instead of the traditional course on "Resources for the Social Sciences," the new course will be "Information Transfer in the Social Sciences." Thus the focus is on the disciplines and the information transfer processes in these disciplines. The resources will be placed in the context of this process. In fact, the purpose, scope, organization, format, etc., of a specific resource can serve as a lens through which the information transfer process can be viewed.

It is anticipated that career specialization will occur at the third level. Each of the three areas (librarianship, information science and information manager) will concentrate their study in courses leading to further specialization within each field. For example, librarians will focus on organizational and service programs appropriate to specific groups (e.g. children) or environments (e.g. education).

An important change in courses at this level is the introduction of specific seminars on each of the five functions: archival, educational, cultural, educational, informational. Thus, the seminar on the educational function of libraries and information centers will consider this function in all of the contexts of formal education from kindergarten to the university, as well as informal. The focus will be on the educational structure and learning process in each of the organizational environments. Such subjects as curriculum design and teaching methods will be considered in the context of a library's role in enhancing the process. This will lead away from a focus on academic libraries, for example, and toward the function of a library as a component in that higher educational environment.

In summary, the three specialties will begin their program of study with laboratory self-paced experiences designed to orient them with the "shop-level" aspects of library and information service and management. This will be followed at the graduate level with a theoretical core of 12 credits, plus a 3 credit research method course. A second level of 12 credits provides a focus between the general and specific plus more experience in methods of analysis.

This is followed by a sequence of seminars designed to prepare specialization in (1) management for the librarian; (2) technology, organization, storage and retrieval of information for information scientists; and (3) records management and communication for the information manager.

Reference

1. BUTLER, Pierce. An Introduction to Library Science. Chicago: University of Chicago Press, 1933, p. xi, xii.

QUALIFICATIONS REQUIRED OF STAFF MEMBERS AT UNIVERSITY OF TECHNOLOGY LIBRARIES

A short historical review and a personal assessment of future needs.

Sven Westberg
University Librarian
Chalmers University of Technology, Gothenburg, Sweden

Abstract

The author gives a short history of formal qualifications required of applicants to posts as qualified librarian in academic libraries in Sweden. He shows how new developments in education and research as well as in library techniques have affected conditions for work in a library. New tasks have been added to the traditional ones, and it is necessary to find ways of reconciling the new development with existing library expertise, and to find a common denominator, which will work towards an integration of all tasks in a library. This is found in the overall aims for library work: to meet the needs of the customer. These can vary from getting details of information at the information desk, use of computerized documentation services or get instruction in the use of bibliographic tools etc. Instruction and training how best to meet the users' needs should therefore form an important part of all education for librarianship.

Education for librarianship in Sweden has - in the last decade - passed through a transitional period.

Before the foundation - in 1972 - of a new school of librarianship common to library students for all kinds of libraries in Sweden, special regulations regarding qualifications for attaining posts in academic libraries were set down by law.

These took into account the following qualifications of an applicant:

(a) Library education and proven ability in practical library work
(b) Academic qualifications
(c) Bibliographical qualifications
(d) Administrative qualifications (of special importance for applicants to posts as University librarian and Sub-librarian)
(e) Other

Apart from these regulations by law, the "Universitetskanslersämbetet" (The Office of the Chancellor of the Swedish Universities) had issued a set of rules as to the minimum of requirements regarding the levels of academic as well as theoretical and practical

library competence. These latter rules - naturally - tended to restrict the numbers of applicants to choose from, whereas the regulations stipulated by law were broad enough to admit a wider range of interpretations of merits and could thus give the library administrators fairly free hands in selecting a suitable candidate.

Both these sets of rules tended to stress merits testified to in written statements, such as academic certificates and testimonials about practical and theoretical achievements in the profession. It was easier for an administrator to justify the selection of a candidate when he could show that the person in question could produce good paper merits than to test his or her actual working capacity. Thus the term "paper" merits as opposed to "real" merits became a set phrase in this connection.

With the advent of the new Swedish School of Librarianship, the former Chancellor's rules of competence were abolished but the regulations by law were still valid with the amendment of the clause under (a) above, to the effect that this paragraph be reformulated : "A library education attained through library service or at the School of Librarianship. Proven ability in library work."

The distinction between "paper" merits and "real" merits remained, but the importance of written testimonials lost some of its dominance, as the certificates from the School of Librarianship did not show any differentiated grading and you had to find out by word of mouth about applicants' qualifications. This was one effect of the ungraded course system that the library students had perhaps not foreseen when they demanded such a system.

The development described above led to a shift in emphasis, from the traditional "in house" training which was strongly geared to the special library where the training was given, to a much broader theoretical background based on the needs and functions of different sorts of libraries.

At the same time, the abolishment of the Chancellor's rules of competence with regard to the academic qualifications tended to lower the level of the applicants, in this respect. Perhaps it could be maintained that whereas the theoretical library background has broadened, the academic subject-orientated is more shallow. This poses problems for all kinds of academic libraries, specially for those serving schools of Medicine, Technology and Science. Library students are mostly more familiar with the Humanities and Social sciences. In the fields of Medicine, Technology and Science, it is an acute problem to find staff suitable for the tasks of qualified librarians. It is, however, important that librarians serving research in these subject areas should have, not only specialized subject knowledge, but also some experience of research work.

I will in the following mainly concentrate on the problems for a university of technology library but I would like to stress here again that these problems are of a general nature and apply equally - mutatis mutandis - to all academic or research libraries. This is due to the fact that library development in the last decades has been very rapid. New tasks - not formerly regarded as part of a librarians work - have been added to the traditional ones.

It could be said that - roughly - libraries have passed through three stages. We have the "storage" library, harbouring the treasures of learning which in old times were very scarce. The main tasks of this sort of library was to guard their books from anyone who was not a highly qualified scholar and well known to the library's guardian or "keeper". The next stage was the "service" library, giving the service that was demanded from it by users who knew what they wanted. This sort of library did not normally go out to its visitors to actually teach them about those holdings of the library they did not know of beforehand. This kind of library has - for many reasons, not least those of lack of staff - prevailed into recent times.

The third stage library is the "active exploitation library." This has emerged during the last decade and is concerned with attracting potential new users - apart from those already served by the "service library". This means the implementation of new activities aimed at satisfying user needs not earlier recognized as specifically library orientated. (Fjällbrant, 1981) [1].

The advent of the "information explosion" and the growing number of people searching for information has made necessary a radical change, also in attitude, in libraries and information centres.

We can note to-day the need for new functions to be integrated in the library system:

(a) Computerized information and documentation services
(b) Education for "end-users" in information searching (manual and computerized)
(c) Instruction in communication (including teaching in technical writing) and presentation of research results (written and oral)
(d) Research and development in the field of library and information techniques and services.

The need for integrating these functions in the traditional system led, in some libraries, to the establishment of new departments with specialists in the respective fields.

The problems involved in developments of this kind are only too obvious and are of a general kind. However, in libraries with a traditional system, the implementation of new functions often leads to conflicts. Librarians trained and appointed in accordance with

the written rules I have mentioned earlier will, often, not readily accept the new functions which they do not consider as belonging to the tasks of a library. Furthermore, the implementation of the new functions requires staff with background and training different from those of the traditional librarian. This will affect his or her attitudes to the newcomers in a negative way. Their competence will be questioned on the grounds of the existing rules for posts as librarians. Thus anyone trying to develop anything new, is hampered by the fact that you cannot get persons really competent to fulfil the new tasks, because they do not meet all the formal requirements in the stipulated regulations.

Rules and regulations regarding qualifications for higher level posts in a library can work as a detriment to development if you only take into consideration existing traditional library systems. It seems essential that - if libraries are going to meet the growing and changing needs of their users - library development has to follow the same lines as the development of scientific research, educational aims and methods as well as new library techniques. No rules disregarding this simple and obvious truth should therefore be set down, lest libraries remain static stores of books, and librarians, with an active interest in developing their institution, become unmotivated and frustrated in their work.

Parenthetically it should be noted here that it is not only in too fixed rules for recruiting that there is a danger to development. Within the existing hierarchy in a library, too restricted systems for staff promotion may well hinder renewal. It is not necessarily the persons with greatest length of service that are the best promotors of development, although they have, of course a long working experience to draw on. This experience in itself may often lead to a negative attitude towards new ideas and techniques. It should be possible to build into the promotion system, methods for making it possible for senior staff - even library directors - to leave a higher position for a lower one without this necessarily being something negative. Naturally the period in higher office should count as a merit and also be considered in connection with estimating the pension at retirement.

Looking back very briefly at the new functions listed above one can only note under:

(a) that manual and computerized information retrieval services should be integrated and not be the work of two different groups of people jealously guarding their respective territories.

(b) Education for end-users should not aim at getting the user to "understand the librarian's situation" as was once suggested to me at a meeting, but should aim at making the users realize their own situation when searching for relevant information and, consequently, to seek this information in the most effective way.

(c) Instruction in communication should aim at meeting a need of the student and researcher that is felt more and more sharply. This need is facilitated if the instructors and students, can easily use the information tools available at the university and research library. This activity should, therefore, form a natural and intregated part of the library.

(d) The lack of research and development within the library and at schools of librarianship has often in the past led to serious mistakes in the assessment of future development. To avoid such mistakes, research and development in the area of library and information science should be carried out within the same frame of ordinary library work.

The one common denominator, for the new functions as well as the traditional ones is to do with the same thing that I have mentioned already. The aims of all activities should be to meet the needs of the end-user. All departments - old as well as new - should work as a team towards the common goal: the end users' needs.

Here, of course, Schools of Librarianship have their central part to play, and their task is simply to teach the library student how to understand what the user needs, to know enough about the necessary bibliographic tools to be able to assist students in their information searches, and to teach the students how to search independently. Because, after all, this is what it all boils down to. Professor Lewis Elton has put this very succinctly in a paper called "Developments in learning and teaching and their impact on libraries":

> "The very rapid changes which have taken place in the library scene in turn call for changes in the pre-service training of librarians and for the extensive provision of in-service training. Librarians to-day not only need more and more diverse knowledge than in the past, but above all they have to acquire new skills and develop new attitudes towards their work and towards those whom they serve."

Reference

1. FJÄLLBRANT, N. User education and the role of the academic library. Paper given at 100th ALA Conference, 26th to 30th June 1981, San Francisco, U.S.A.

THE ERNA AND VICTOR HASSELBLAD FOUNDATION

announces that in 1982 it will award grants to further education and research in the natural sciences and photography.

Applications for grants are invited, and the Foundation requests that the following information be included:

Curriculum vitae
Description of the scientific project
Cost estimate
Amount of funding received from other sources
Other documents the applicant wishes to submit for consideration.

Granted funds will be disbursed before the end of 1982.

Please submit applications, in triplicate, before March 1, 1982, to

The Erna and Victor Hasselblad Foundation
P.O.Box 18
S-401 20 Göteborg,
Sweden

Göteborg, October 4, 1981